

1. TRANSMITTED DATA

1-1 CHANNEL MESSAGES

[H] :Hex, [D] :Decimal

Status [Hex]	Second [H] [D]	Third [H] [D]	Description (Transmitted by)	ENA
8n	kk (kk)	40 (64)	Note Off (Key Off)	*1 A
9n	kk (kk)	vv (vv)	Note On (vv)=1-127 (Key On)	*1 A
An	kk (kk)	vv (vv)	Poly Key Pressure (Sequence data)	T,Q
Bn	00 (00)	mm (mm)	Bank Select(MSB) (BANK keys, Prog/Combi change)	*2 PB
Bn	01 (01)	vv (vv)	Modulation1 (Joy Stick +Y)	C
Bn	02 (02)	vv (vv)	Modulation2 (Joy Stick -Y)	C
Bn	04 (04)	vv (vv)	Foot Pedal (A.Pdl = Foot Pedal)	C
Bn	05 (05)	vv (vv)	Portamento Time (A.Pdl/Knob-B = Porta.Time,S Chg)	C
Bn	07 (07)	vv (vv)	Volume (A.Pdl/Knob-B = Volume,S/C Chg)	C
Bn	08 (08)	vv (vv)	Post IFX Panpot (A.Pdl/Knob-B = IFX Pan,S Chg)	C
Bn	0A (10)	vv (vv)	Panpot (A.Pdl/Knob-B = Pan,S Chg)	C
Bn	0B (11)	vv (vv)	Expression (A.Pdl/Knob-B = Expression)	C
Bn	0C (12)	vv (vv)	Effect Control 1 (A.Pdl/Knob-B = FX Control1)	C
Bn	0D (13)	vv (vv)	Effect Control 2 (A.Pdl/Knob-B = FX Control2)	C
Bn	0E (14)	vv (vv)	(KARMA ON/OFF, A.SW=KARMAOn/Off)*3	C
Bn	10 (16)	vv (vv)	Multi Purpose Ctrl1 (Knob-B = MIDI CC#16)	C
Bn	11 (17)	vv (vv)	Multi Purpose Ctrl2 (Knob-B = Knob Mod1)	C
Bn	12 (18)	vv (vv)	Multi Purpose Ctrl3 (Value Slider)	C
Bn	13 (19)	vv (vv)	Multi Purpose Ctrl4 (Knob-B = Knob Mod2)	C
Bn	14 (20)	vv (vv)	(Knob-B = Knob Mod3)	C
Bn	15 (21)	vv (vv)	(Knob-B = Knob Mod4)	C
Bn	16 (22)	vv (vv)	(KARMA Knob1)	*3 C
Bn	17 (23)	vv (vv)	(KARMA Knob2)	*3 C
Bn	18 (24)	vv (vv)	(KARMA Knob3)	*3 C
Bn	19 (25)	vv (vv)	(KARMA Knob4)	*3 C
Bn	1A (26)	vv (vv)	(KARMA Knob5)	*3 C
Bn	1B (27)	vv (vv)	(KARMA Knob6)	*3 C
Bn	1C (28)	vv (vv)	(KARMA Knob7)	*3 C
Bn	1D (29)	vv (vv)	(KARMA Knob8)	*3 C
Bn	1E (30)	00/7F (00/127)	(KARMA SCENE)	*3 C
Bn	1F (31)	00/7F (00/127)	(KARMA LATCH, A.SW=KARMA Latch)	*3 C
Bn	20 (32)	bb (bb)	Bank Select(LSB) (BANK keys, Prog/Combi change)	*2 PB
Bn	40 (64)	vv (vv)	Hold1 (Damper)	C
Bn	41 (65)	00/7F (00/127)	Portamento Off/On (SW1/SW2/A.SW = Porta.SW, S Chg)	C
Bn	42 (66)	00/7F (00/127)	Sostenuto Off/On (A.SW = Sostenuto)	C
Bn	43 (67)	vv (vv)	Soft Pedal (A.SW = Soft)	C
Bn	46 (70)	vv (vv)	Sound Controller 1 (Knob-B = F/A Sustain)	C
Bn	47 (71)	vv (vv)	Sound Controller 2 (Knob-2A/Knob-B = Resonance/HPF)	C
Bn	48 (72)	vv (vv)	Sound Controller 3 (Knob-4A/Knob-B = F/A Release)	C
Bn	49 (73)	vv (vv)	Sound Controller 4 (Knob-B = F/A Attack)	C
Bn	4A (74)	vv (vv)	Sound Controller 5 (Knob-1A/Knob-B = LPF Cutoff)	C
Bn	4B (75)	vv (vv)	Sound Controller 6 (Knob-B = F/A Decay)	C
Bn	4C (76)	vv (vv)	Sound Controller 7 (Knob-B = Pitch LF01 Spd)	C
Bn	4D (77)	vv (vv)	Sound Controller 8 (Knob-B = Pitch LF01 Dep)	C
Bn	4E (78)	vv (vv)	Sound Controller 9 (Knob-B = Pitch LF01 Dly)	C
Bn	4F (79)	vv (vv)	Sound Controller 10 (Knob-3A/Knob-B = Filter EG Int)	C
Bn	50 (80)	00/7F (00/127)	Multi Purpose Ctrl5 (SW1/Knob-B = SW1 Mod.)	C
Bn	51 (81)	00/7F (00/127)	Multi Purpose Ctrl6 (SW2/Knob-B = SW2 Mod.)	C
Bn	52 (82)	00/7F (00/127)	Multi Purpose Ctrl7 (A.SW/Knob-B = Foot SW)	C
Bn	53 (83)	vv (vv)	Multi Purpose Ctrl8 (Knob-B = MIDI CC#83)	C
Bn	55 (85)	00/7F (00/127)	(KARMA SW1)	*3 C
Bn	56 (86)	00/7F (00/127)	(KARMA SW2)	*3 C
Bn	57 (87)	00/7F (00/127)	(CHORD TRIGGER1)	*3 C
Bn	58 (88)	00/7F (00/127)	(CHORD TRIGGER2)	*3 C
Bn	59 (89)	00/7F (00/127)	(CHORD TRIGGER3)	*3 C
Bn	5A (90)	00/7F (00/127)	(CHORD TRIGGER4)	*3 C
Bn	5B (91)	vv (vv)	Effect 1 Depth (A.Pdl/Knob-B = MFX Send2, S Chg)	C
Bg	5C (92)	00/7F (00/127)	Effect 2 Depth (All Insert FX Off/On)	C
Bn	5D (93)	vv (vv)	Effect 3 Depth (A.Pdl/Knob-B = MFX Send1, S Chg)	C
Bg	5E (94)	00/7F (00/127)	Effect 4 Depth (Master FX1 Off/On)	C
Bg	5F (95)	00/7F (00/127)	Effect 5 Depth (Master FX2 Off/On)	C
Bn	cc (cc)	vv (vv)	Control (cc)=0-95 (Knob-B = MIDI CC#00-95)	C
Bn	cc (cc)	vv (vv)	Control (cc)=0-95 (KARMA RTC = MIDI CC#00-95)	C
Bn	cc (cc)	vv (vv)	Control (cc)=0-95 (KARMA TxCC = MIDI CC#00-95)	*4 C
Bn	cc (cc)	vv (vv)	Control (cc)=0-95 (KARMA GE data)	C
Bn	cc (cc)	vv (vv)	Control (cc)=0-101 (Sequence data)	Q
Cn	pp (pp)	-- --	Program Change (Prog/Combi change)	*2 P
Dn	vv (vv)	-- --	Channel Pressure (After Touch)	T
En	bb (bb)	bb (bb)	Bender Change (Joy Stick X)	C

A.Pdl : Assignable Pedal

A.SW : Assignable Switch

S Chg : Transmitted when change a Song No.(Seq. mode). (Status = EXT,EX2,BTH)

C/S Chg : Transmitted when change a Combination or Song No.(Seq. mode). (Status = EXT,EX2,BTH)

n : MIDI Channel No. (0 - 15) Usually Global Channel.

When in Combination/Sequencer/Song Play mode, each timbre's/track's channel.(Status = EXT,EX2 or BTH)

g : Always Global Channel No. (0 - 15)

ENA = A : Always Enabled

C : Enabled when Enable Control Change in Global mode is checked

P : Enabled when Enable Program Change in Global mode is checked

PB : Enabled when Enable Program and Bank Change in Global mode is checked

T : Enabled when Enable After Touch in Global mode is checked

Q : Enabled when Sequencer is playing(transmit), recording(receive)

*1 : kk = 24 - 108 : Keyboard (61keys + Transpose)
= 00 - 127 : Sequencer and KARMA-Module

*2 : Program Combination MIDI Out[Hex] (Bank Map is KORG) (Bank Map is GM(2))

BankA	000 - 127	BankA 000 - 127	mm,bb,pp	= 00,00, 00 - 7F	= 3F,00, 00 - 7F
B	000 - 127	B 000 - 127		00,01, 00 - 7F	3F,01, 00 - 7F
C	000 - 127	C 000 - 127		00,02, 00 - 7F	3F,02, 00 - 7F
D	000 - 127	D 000 - 127		00,03, 00 - 7F	3F,03, 00 - 7F
E	000 - 127	E 000 - 127		00,04, 00 - 7F	3F,04, 00 - 7F
F	000 - 127	F 000 - 127		00,05, 00 - 7F	3F,05, 00 - 7F
G	001 - 128	:		79,00, 00 - 7F	79,00, 00 - 7F
g(1)-(9)	001 - 128	:		79,01-09,00 - 7F	79,01-09,00 - 7F
g(d)	001 - 128	:		78,00, 00 - 7F	78,00, 00 - 7F

*3 : When "Default Setting" CC# is assigned to the KARMA RTC(Realtime Controls) in Global mode .

KARMA Relatime Controls "Default Setting" :

ON/OFF	: CC#14
Knob1	: CC#22
Knob2	: CC#23
Knob3	: CC#24
Knob4	: CC#25
Knob5	: CC#26
Knob6	: CC#27
Knob7	: CC#28
Knob8	: CC#29
SCENE	: CC#30
LATCH	: CC#31
SW1	: CC#85
SW2	: CC#86
CHORD TRIGGER1	: CC#87
CHORD TRIGGER2	: CC#88
CHORD TRIGGER3	: CC#89
CHORD TRIGGER4	: CC#90

n : When in Program/Combination mode, Global channel.
When in Sequencer/Song Play mode, current selected track's channel.

*4 : Transmitted when turn KARMA On.

Transmitted when change a GE. (KARMA ON/OFF = On)

Transmitted when change a Program, Combination or Song No.(Seq. mode) (KARMA ON/OFF = On)

1-2 SYSTEM COMMON MESSAGES

[H] :Hex, [D] :Decimal

Status [Hex]	Second [H] [D]	Third [H] [D]	Description (Transmitted when)
F2	ss (ss)	tt (tt)	Song Position Pointer ss : Least significant [LSB] *4 tt : Most significant [MSB] *4
F3	ss (ss)		Song Select (Song or Cue List is selected) ss : Song(0-127)/Cue List(0-19) No.

Transmits Song Position Pointer message when in Sequencer and Song Play mode (Internal Clock)

Transmits Song Select message when in Sequencer mode (Internal Clock)

*4 : For example, if time signature is 4/4 or 8/8, tt,ss = 00,10 means one measure.

1-3 SYSTEM REALTIME MESSAGES

Status[Hex]	Description (Transmitted when ...)
F8	Timing Clock (Always in Prog/Combi/Seq/Song Play/Global mode) *
FA	Start (START in Seq/Song Play mode) *
FB	Continue (Continue START in Seq/Song Play mode) *
FC	Stop (STOP in Seq/Song Play mode) *
FE	Active Sensing (Always)

* Transmits these messages when MIDI Clock in Global mode is Internal.

1-4 SYSTEM EXCLUSIVE

1-4-1 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (NON REALTIME)

DEVICE INQUIRY REPLY (Transmits when received a INQUIRY MESSAGE REQUEST)

[F0,7E,0g,06,02,42,5D,00,05,00,nn,00,vv,00,F7]	3rd byte g : Global Channel
	6th byte 42 : KORG ID
	7th byte 5D : KARMA - Music Workstation ID
	9th byte 05 : KARMA - Music Workstation Member Code
	11th byte nn : System No. (01 -)
	13th byte vv : System Version (01 -)

1-4-2 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (REALTIME)

Master Volume

[F0,7F,0g,04,01,vv,mm,F7]	3rd byte g : Global Channel
	6th byte vv : Value(LSB)
	7th byte mm : Value(MSB)
	mm,vv = 00,00 - 7F,7F : Min - Max

2.RECOGNIZED RECEIVE DATA

2-1 CHANNEL MESSAGES

[H] :Hex, [D] :Decimal

Status [Hex]	Second [H] [D]	Third [H] [D]	Description (Use)	ENA
8n	kk (kk)	xx (xx)	Note Off	A
9n	kk (kk)	00 (00)	Note Off	A
9n	kk (kk)	vv (vv)	Note On (vv)=1-127	A
An	kk (kk)	vv (vv)	Poly Key Pressure (as AMS)	T,Q
Bn	00 (00)	mm (mm)	Bank Select(MSB) (for Prog/Combi change)	*1 P
Bn	01 (01)	vv (vv)	Modulation1 (as Joy Stick +Y)	C
Bn	02 (02)	vv (vv)	Modulation2 (as Joy Stick -Y)	C
Bn	04 (04)	vv (vv)	Foot Pedal (as AMS & FX Dmod Src =Pedal)	C
Bn	05 (05)	vv (vv)	Portamento Time	C
Bn	06 (06)	vv (vv)	Data Entry (MSB) (for RPC edit)	C
Bn	07 (07)	vv (vv)	Volume	C
Bn	08 (08)	vv (vv)	Balance Control (for Post IFX Panpot control)	*2 C
Bn	0A (10)	vv (vv)	Panpot	C
Bn	0B (11)	vv (vv)	Expression	C
Bn	0C (12)	vv (vv)	Effect Control 1 (as FX Dmod Src =FX1)	C
Bn	0D (13)	vv (vv)	Effect Control 2 (as FX Dmod Src =FX2)	C
Bn	0E (14)	dd (dd)	(as KARMA ON/OFF)	*5,6 C
Bn	10 (16)	vv (vv)	Multi Purpose Ctrl11 (as AMS & FX Dmod Src =Ribbon)	C
Bn	11 (17)	vv (vv)	Multi Purpose Ctrl12 (as AMS & FX Dmod Src =KnobM1)	C
Bn	12 (18)	vv (vv)	Multi Purpose Ctrl13 (as Value Slider)	C
Bn	13 (19)	vv (vv)	Multi Purpose Ctrl14 (as AMS & FX Dmod Src =KnobM2)	C
Bn	14 (20)	vv (vv)	(as AMS & FX Dmod Src =KnobM3)	C
Bn	15 (21)	vv (vv)	(as AMS & FX Dmod Src =KnobM4)	C
Bn	16 (22)	vv (vv)	(as KARMA Knob1)	*5 C
Bn	17 (23)	vv (vv)	(as KARMA Knob2)	*5 C
Bn	18 (24)	vv (vv)	(as KARMA Knob3)	*5 C
Bn	19 (25)	vv (vv)	(as KARMA Knob4)	*5 C
Bn	1A (26)	vv (vv)	(as KARMA Knob5)	*5 C
Bn	1B (27)	vv (vv)	(as KARMA Knob6)	*5 C
Bn	1C (28)	vv (vv)	(as KARMA Knob7)	*5 C
Bn	1D (29)	vv (vv)	(as KARMA Knob8)	*5 C
Bn	1E (30)	dd (dd)	(as KARMA SCENE)	*5,6 C
Bn	1F (31)	dd (dd)	(as KARMA LATCH)	*5,6 C
Bn	20 (32)	bb (bb)	Bank Select(LSB) (for Prog / Combi change)	*1 P
Bn	26 (38)	vv (vv)	Data Entry (LSB) (for RPC edit)	C
Bn	40 (64)	vv (vv)	Hold1 (as Damper)	C
Bn	41 (65)	dd (dd)	Portamento Off/On	*6 C
Bn	42 (66)	dd (dd)	Sostenuto Off/On	*6 C
Bn	43 (67)	vv (vv)	Soft Pedal	C
Bn	46 (70)	vv (vv)	Sound Controller 1 (for Sustain Level control)	C
Bn	47 (71)	vv (vv)	Sound Controller 2 (for Resonance/HPF Cutoff ctrl)	C
Bn	48 (72)	vv (vv)	Sound Controller 3 (for Release Time control)	C
Bn	49 (73)	vv (vv)	Sound Controller 4 (for Attack Time control)	C
Bn	4A (74)	vv (vv)	Sound Controller 5 (for LPF Cutoff control)	C
Bn	4B (75)	vv (vv)	Sound Controller 6 (for Decay Time control)	C
Bn	4C (76)	vv (vv)	Sound Controller 7 (for LFO1 Speed control)	C
Bn	4D (77)	vv (vv)	Sound Controller 8 (for LFO1 Pitch Depth control)	C
Bn	4E (78)	vv (vv)	Sound Controller 9 (for LFO1 Delay control)	C
Bn	4F (79)	vv (vv)	Sound Controller 10 (for Filter EG Intensity ctrl)	C
Bn	50 (80)	vv (vv)	Multi Purpose Ctrl15 (as AMS & FX Dmod Src =SW 1)	C
Bn	51 (81)	vv (vv)	Multi Purpose Ctrl16 (as AMS & FX Dmod Src =SW 2)	C
Bn	52 (82)	vv (vv)	Multi Purpose Ctrl17 (as AMS & FX Dmod Src =Foot SW)	C
Bn	53 (83)	vv (vv)	Multi Purpose Ctrl18 (as AMS & FX Dmod Src =CC#83)	C
Bn	55 (85)	dd (dd)	(as KARMA SW1)	*5,6 C
Bn	56 (86)	dd (dd)	(as KARMA SW2)	*5,6 C
Bn	57 (87)	dd (dd)	(as CHORD TRIGGER1)	*5,6 C
Bn	58 (88)	dd (dd)	(as CHORD TRIGGER2)	*5,6 C
Bn	59 (89)	dd (dd)	(as CHORD TRIGGER3)	*5,6 C
Bn	5A (90)	dd (dd)	(as CHORD TRIGGER4)	*5,6 C
Bn	5B (91)	vv (vv)	Effect 1 Depth (for Send 2 Level control)	C
Bg	5C (92)	ee (ee)	Effect 2 Depth (for All Insert FX Off/On)	*7 C
Bn	5D (93)	vv (vv)	Effect 3 Depth (for Send 1 Level control)	C
Bg	5E (94)	ee (ee)	Effect 4 Depth (for Master FX1 Off/On)	*7 C
Bg	5F (95)	ee (ee)	Effect 5 Depth (for Master FX2 Off/On)	*7 C
Bn	60 (96)	00 (00)	Data Increment (for RPC edit)	C
Bn	61 (97)	00 (00)	Data Decrement (for RPC edit)	C
Bn	62 (98)	ss (ss)	NRPN Param No. (LSB) (for NRPN select)	*3 C
Bn	63 (99)	tt (tt)	NRPN Param No. (MSB) (for NRPN select)	*3 C
Bn	64 (100)	0r (0r)	RPN Param No. (LSB) (for RPN select)	*4 C
Bn	65 (101)	00 (00)	RPN Param No. (MSB) (for RPN select)	*4 C
Bn	cc (cc)	vv (vv)	Control data (for Seq. recording (cc)=0-101)	C,Q
Bn	78 (120)	00 (00)	All Sound Off	C
Bn	79 (121)	00 (00)	Reset All Controllers	C
Bn	79 (121)	00/7F (00/127)	Local Control Off/On	A
Bn	7B (123)	00 (00)	All Notes Off	A
Bn	7C (124)	00 (00)	Omni Mode Off (as All Notes Off)	A
Bn	7D (125)	00 (00)	Omni Mode On (as All Notes Off)	A
Bn	7E (126)	00 - 10 (00 - 16)	Mono Mode On (as All Notes Off)	A
Bn	7F (127)	00 (00)	Poly mode On (as All Notes Off)	A
Cn	pp (pp)	-- --	Program Change (for Prog/Combi change)	*1 P
Dn	vv (vv)	-- --	Channel Pressure (as After Touch)	T
En	bb (bb)	bb (bb)	Bender Change	C

AMS : Alternate Modulation Source
FX Dmod Src: Effect Dynamic Modulation Source

n : MIDI Channel No. (0 - 15) Usually Global Channel.
When in Combination/Sequencer/Song Play mode, each timbre's/track's channel.(Status is INT or BTH)
For KARMA module input in Combination/Sequencer/Song Play mode, Input Channel of each KARMA module.
g : Always Global Channel No. (0 - 15)
x : Random
ENA : Same as Transmitted data

*1 : When Bank Map in Global mode is KORG;
MIDI In [Hex] Program Combination
mm,bb,pp = 00,00, 00 - 7F : Bank A 000 - 127 : Bank A 000 - 127
00,01, 00 - 7F : B 000 - 127 : B 000 - 127
00,02, 00 - 7F : C 000 - 127 : C 000 - 127
00,03, 00 - 7F : D 000 - 127 : D 000 - 127
00,04, 00 - 7F : E 000 - 127 : E 000 - 127
00,05, 00 - 7F : F 000 - 127 : F 000 - 127
79,00, 00 - 7F : G 001 - 128
79,01-09,00 - 7F : g(1)-g(9) 001 - 128
78,00, 00 - 7F : g(d) 001 - 128

38,00, 00 - 7F : G 001 - 128
3E,00, 00 - 7F : g(d) 001 - 128

When Bank Map in Global mode is GM(2);
MIDI In [Hex] Program Combination
mm,bb,pp = 3F,00, 00 - 7F : Bank A 000 - 127 : Bank A 000 - 127
3F,01, 00 - 7F : B 000 - 127 : B 000 - 127
3F,02, 00 - 7F : C 000 - 127 : C 000 - 127
3F,03, 00 - 7F : D 000 - 127 : D 000 - 127
3F,04, 00 - 7F : E 000 - 127 : E 000 - 127
3F,05, 00 - 7F : F 000 - 127 : F 000 - 127
79,00, 00 - 7F : G 001 - 128
79,01-09,00 - 7F : g(1)-g(9) 001 - 128
78,00, 00 - 7F : g(d) 001 - 128

00,00, 00 - 7F : G 001 - 128
38,00, 00 - 7F : G 001 - 128
3E,00, 00 - 7F : g(d) 001 - 128
3F,7F, 00 - 7F : Mute (KORG MUTE)
(XG) 00,01 - : Assign correspond program in G, g(1) - g(9)
(GS) 01,00 - : Assign correspond program in G, g(1) - g(9)

*2 : n : When in Program mode, Global channel
When in Combination/Sequencer/Song Play mode, each IFX's channel.

*3 : tt,ss = 01,08 : Vibrato Rate
tt,ss = 01,09 : Vibrato Depth
tt,ss = 01,0A : Vibrato Delay
tt,ss = 01,20 : Filter Cutoff
tt,ss = 01,21 : Filter Resonance
tt,ss = 01,63 : EG Attack Time
tt,ss = 01,64 : EG Decay Time
tt,ss = 01,66 : EG Release Time
tt,ss = 14,kk : Drum Filter Cutoff *
tt,ss = 15,kk : Drum Filter Resonance *
tt,ss = 16,kk : Drum EG Attack Time *
tt,ss = 17,kk : Drum EG Decay Time *
tt,ss = 18,kk : Drum Coarse Tune *
tt,ss = 19,kk : Drum Fine Tune *
tt,ss = 1A,kk : Drum Volume *
tt,ss = 1C,kk : Drum Panpot *
tt,ss = 1D,kk : Drum Rev Send(Send2) *
tt,ss = 1E,kk : Drum Cho Send(Send1) *

* Only valid when Part Mode is Drum, MDrml - Mdrml4.
kk: Drum Inst No. (0C - 6C = C0 - C8)
Data Entry LSB value has no effect.

*4 : r = 0 : Pitch Bend Sensitivity (Bend Range)
= 1 : Fine Tune (Detune)
= 2 : Coarse Tune (Transpose)

For drum program, both of Fine Tune and Coarse Tune affect to Detune.
Data Entry LSB value has no effect for Pitch Bend Sensitivity and Coarse Tune.

*5 : When "Default Setting" CC# is assigned to the KARMA RTC(Realtime Controls) in Global mode .

n : When in Program/Combination mode, Global channel.
When in Sequencer/Song Play mode, current selected track's channel.

*6 : dd = 00 - 3F : Off
40 - 7F : On

*7 : ee = 00 : Off
01 - 7F : On

2-2 SYSTEM COMMON MESSAGES

[H] :Hex, [D] :Decimal

Status	Second	Third	Description (Use for)
[Hex]	[H] [D]	[H] [D]	

F2	ss (ss)	tt (tt)	Song Position Pointer (Location in Seq & KARMA Control) ss : Least significant [LSB] tt : Most significant [MSB]
F3	ss (ss)		Song Select (Song or Cue List select) ss : Song(0-127)/Cue List(0-19) No.

Receive Song Position Pointer when in Program/Combination/Sequencer mode (External Clock)
Receive Song Select when in Sequencer mode (External Clock)

When in the Cue List page (Seq mode P2.1),
Song Position Pointer and Song Select respond to Location and No. of Cue List.

2-3 SYSTEM REALTIME MESSAGES

Status[Hex]	Description (Use for.....)
F8	Timing Clock (Tempo, AMS & FX Dmod Src) *
FA	Start (Seq Start & KARMA Control) *
FB	Continue (Seq Continue start & KARMA Control) *
FC	Stop (Seq Stop & KARMA Control) *
FE	Active Sensing (MIDI Connect check)

* Receive when MIDI Clock in Global mode is External.

2-4 SYSTEM EXCLUSIVE

2-4-1 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (NON REALTIME)

DEVICE INQULRY (When received this message, transmits INQULRY MESSAGE REPLY)
[F0,7E,nn,06,01,F7] 3rd byte nn : Channel = 0 - F : Global Channel
= 7F : Any Channel

GM System On (Receive when in Song Play mode)
[F0,7E,nn,09,01,F7] 3rd byte nn : Channel = 0 - F : Global Channel
= 7F : Any Channel

2-4-2 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (REALTIME)

Master Volume
[F0,7F,0g,04,01,vv,mm,F7] 3rd byte g : Global Channel
6th byte vv : Value(LSB)
7th byte mm : Value(MSB)
mm,vv = 00,00 - 7F,7F : Min - Max

Master Balance
[F0,7F,0g,04,02,vv,mm,F7] 3rd byte g : Global Channel
6th byte vv : Value(LSB)
7th byte mm : Value(MSB)
mm,vv = 00,00:Left, 40,00:Center, 7F,7F:Right

Master Fine Tune (Control Master Tune(cent) in Global)
[F0,7F,0g,04,03,vv,mm,F7] 3rd byte g : Global Channel
6th byte vv : Value(LSB)
7th byte mm : Value(MSB)
mm,vv = 20,00:-50, 40,00:+00, 60,00:+50

Master Coarse Tune (Control Transpose (chromatic step) in Global)
[F0,7F,0g,04,04,vv,mm,F7] 3rd byte g : Global Channel
6

3.KORG System Exclusive Function Code (5th byte of Exclusive message) List

Func	Description
12	MODE REQUEST
10	CURRENT PROGRAM PARAMETER DUMP REQUEST
1C	PROGRAM PARAMETER DUMP REQUEST
19	CURRENT COMBINATION PARAMETER DUMP REQUEST
1D	COMBINATION PARAMETER DUMP REQUEST
18	SEQUENCE DATA DUMP REQUEST
0E	GLOBAL DATA DUMP REQUEST
0D	DRUMKIT DATA DUMP REQUEST
0F	ALL DATA(PROG,COMBI,GLOBAL,DRUMS,SEQ)DUMP REQUEST
11	PROGRAM WRITE REQUEST
1A	COMBINATION WRITE REQUEST
40	CURRENT PROGRAM PARAMETER DUMP
4C	PROGRAM PARAMETER DUMP
49	CURRENT COMBINATION PARAMETER DUMP
4D	COMBINATION PARAMETER DUMP
48	SEQUENCE DATA DUMP
51	GLOBAL DATA DUMP
52	DRUMKIT DATA DUMP
50	ALL DATA(PROG,COMBI,GLOBAL,DRUMS,SEQ)DUMP
4E	MODE CHANGE
41	PARAMETER CHANGE
53	DRUMKIT PARAMETER CHANGE

- F0, 42, 3g, 5D Excl Header
 12 Function
 F7 End of Excl
 (Receives this message, and transmits Func=42 message)
- (2) CURRENT PROGRAM PARAMETER DUMP REQUEST R
 F0, 42, 3b, 5D Excl Header
 10 Function
 00 Reserved
 F7 End of Excl
 (Receives this message, and transmits Func=40 or Func=24 message)
- (3) PROGRAM PARAMETER DUMP REQUEST R
 F0, 42, 3g, 5D Excl Header
 1C Function
 00kk 0bbb Kind and Bank (*1)
 0ppp pppp Program No.
 00 Reserved
 F7 End of Excl
 (Receives this message, and transmits Func=4C or Func=24 message)
- (4) CURRENT COMBINATION PARAMETER DUMP REQUEST R
 F0, 42, 3g, 5D Excl Header
 19 Function
 00 Reserved
 F7 End of Excl
 (Receives this message, and transmits Func=49 or Func=24 message)
- (5) COMBINATION PARAMETER DUMP REQUEST R
 F0, 42, 3g, 5D Excl Header
 1D Function
 00kk 0bbb Kind and Bank (*2)
 0ccc cccc Combination No.
 00 Reserved
 F7 End of Excl
 (Receives this message, and transmits Func=4D or Func=24 message)
- (6) SEQUENCE DATA (In Memory) DUMP REQUEST R
 F0, 42, 3g, 5D Excl Header
 18 Function
 00 Reserved
 F7 End of Excl
 (Receives this message, and transmits Func=48 or Func=24 message)
- (7) GLOBAL DATA DUMP REQUEST R
 F0, 42, 3g, 5D Excl Header
 0E Function
 00 Reserved
 F7 End of Excl
 (Receives this message, and transmits Func=51 or Func=24 message)
- (8) DRUMKIT DATA (In Memory) DUMP REQUEST R
 F0, 42, 3g, 5D Excl Header
 0D Function
 0000 000k Kind (*3)
 00dd dddd Drumkit No. (*3)
 00 Reserved
 F7 End of Excl
 (Receives this message, and transmits Func=52 or Func=24 message)
- (9) ALL DATA(PROG,COMBI,GLOBAL,DRUMS,SEQ)DUMP REQUEST R
 F0, 42, 3g, 5D Excl Header
 0F Function
 00 Reserved
 F7 End of Excl
 (Receives this message, and transmits Func=50 or Func=24 message)
- (10) PROGRAM WRITE REQUEST R
 F0, 42, 3g, 5D Excl Header
 11 Function
 0000 0bbb Write Program Bank (*4)
 0ppp pppp Write Program No.
 F7 End of Excl
 (Receives this message, write the data and transmits Func=21 or Func=22 message)
- (11) COMBINATION WRITE REQUEST R
 F0, 42, 3g, 5D Excl Header
 1A Function
 0000 0bbb Write Combination Bank (*4)
 0ccc cccc Write Combination No.
 F7 End of Excl
 (Receives this message, write the data and transmits Func=21 or Func=22 message)

(12) CURRENT PROGRAM PARAMETER DUMP R , T
 F0, 42, 3g, 5D Excl Header
 40 Function
 0000 000t Program Type(t = 0 : PCM, 1 : MOSS)
 0ddd dddd Data (*5, TABLE1,2)
 F7 End of Excl

(Receives this message & data, and transmits Func=23 or Func=24 message)

Receives Func=10 message, and transmits this message & data.

When Enter the EDIT PROGRAM Page or Edit the PERFORMANCE EDIT by SW, transmits this message & data.

(13) PROGRAM PARAMETER DUMP R , T
 F0, 42, 3g, 5D Excl Header
 4C Function
 0000 000v Available Bank (*7)
 00kk 0bbb Kind and Bank (*7)
 0ppp pppp Program No.
 0ddd dddd Data (*5,*8, TABLE1,2)
 F7 End of Excl

(Receives this message & data, and transmits Func=23 or Func=24 message)

Receives Func=1C message, and transmits this message & data.

Transmits this message & data when DATA DUMP is executed.

(14) CURRENT COMBINATION PARAMETER DUMP R , T
 F0, 42, 3g, 5D Excl Header
 49 Function
 00 Reserved
 0ddd dddd Data (*5,*9, TABLE3)
 F7 End of Excl

(Receives this message & data, and transmits Func=23 or Func=24 message)

Receives Func=19 message, and transmits this message & data.

When the Combi No. is changed by SW, transmits this message & data.

(15) COMBINATION PARAMETER DUMP R , T
 F0, 42, 3g, 5D Excl Header
 4D Function
 00 Reserved
 00kk 0bbb Kind and Bank (*10)
 0ccc cccc Combination No.
 00 Reserved
 0ddd dddd Data (*5,*11, TABLE3)
 F7 End of Excl

(Receives this message & data, and transmits Func=23 or Func=24 message)

Receives Func=1D message, and transmits this message & data.

Transmits this message & data when DATA DUMP is executed.

(16) SEQUENCE DATA (In Memory) DUMP R , T
 F0, 42, 3g, 5D Excl Header
 48 Function
 00 Reserved
 0sss ssss Seq. data Size [4Bytes] (*12-1)
 : :
 0mmmm mmmmm CSeqdataMgr (*5,*12-2, TABLE8)
 : :
 0ccc cccc CueLists Data (*5,*12-3, TABLE9)
 : :
 0ddd dddd Sequence Data (*5,*12-4, TABLE10)
 F7 End of Excl

(Receives this message & data, and transmits Func=23 or Func=24 message)

Receives Func=18 message, and transmits this message & data.

Transmits this message & data when DATA DUMP is executed.

(17) GLOBAL DATA DUMP R , T
 F0, 42, 3g, 5D Excl Header
 51 Function
 00 Reserved
 0ddd dddd Data (*5,*13, TABLE4)
 : :
 F7 End of Excl

(Receives this message & data, and transmits Func=23 or Func=24 message)

Receives Func=0E message, and transmits this message & data.

Transmits this message & data when DATA DUMP is executed.

(18) DRUMKIT DATA DUMP R , T
 F0, 42, 3g, 5D Excl Header
 52 Function
 0000 000k Kind (*14)
 0ddd dddd Drumkit No. (*14)
 00 Reserved
 0ddd dddd Data (*5,*15, TABLE7)
 : :
 F7 End of Excl

(Receives this message & data, and transmits Func=23 or Func=24 message)

Receives Func=0D message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.

(19) ALL DATA (PROG,COMBI,GLOBAL,DRUMS,SEQ) DUMP R , T
F0, 42, 3g, 5D Excl Header
50 Function
0000 000v Available Bank (*16)
00 Reserved
0sss ssss Seq. data Size [4Bytes](*12-1)
:
0ddd dddd Data (*5,*17, TABLE1,2,3,4,7,8,9,10)
F7 End of Excl

(Receives this message & data, and transmits Func=23 or Func=24 message)

Receives Func=0F message, and transmits this message & data.

Transmits this message & data when DATA DUMP is executed.

(20) MODE CHANGE R , T
F0, 42, 3g, 5D Excl Header
4E Function
0000 mmmm Mode (*18)
F7 End of Excl

(Receives this message & data, changes the Mode, and transmits Func=23 or Func=24

When the Mode is changed by SW, transmits this message & data.

(21) PARAMETER CHANGE R , T
F0, 42, 3g, 5D Excl Header
41 Function
0000 mmmm Mode (*18)
0000 0000 Parameter ID (MSB)
0ppp pppp Parameter ID (LSB) (TABLE 1,2,3,5,6)
0000 0000 Parameter SUB ID (MSB)
0qqq qqqq Parameter SUB ID (LSB) (TABLE 1,2,3,5,6)
0vvv vvvv Value (MSB bit7-18) (*19)
0vvv vvvv Value (LSB bit0-6) (*19)
F7 End of Excl

(Receives this message & data, and transmits Func=23 or Func=24 messages)

When the Parameter No. is changed by SW, transmits this message & data.

(22) DRUMKIT PARAMETER CHANGE R , T
F0, 42, 3g, 5D Excl Header
53 Function
0kkk kkkk Drumkit No. kk = 00-3F (: 00-63)
0sss ssss Index No. ss = 00-7F (: C-1-G9)
0000 0000 Parameter No. (MSB) (TABLE 7)
0ppp pppp Parameter No. (LSB) (TABLE 7)
0vvv vvvv Value (MSB bit7~18) (*19)
0vvv vvvv Value (LSB bit0~6) (*19)
F7 End of Excl

(Receives this message & data, and transmits Func=23 or Func=24 messages)

(23) MODE DATA T
F0, 42, 3g, 5D Excl Header
42 Function
0000 mmmm Mode (*18)
0ooo oooo Option (*20)
0sss ssss Setuped data1 (*20)
0ddd dddd Setuped data2 (*20)
00 Reserved
F7 End of Excl

(Receives FUNC=12 message, and transmits this message & data.)

(24) MIDI IN DATA FORMAT ERROR T
F0, 42, 3g, 5D Excl Header
26 MIDI IN DATA FORMAT ERROR
0ccc cccc Error Code (*21)
F7 End of Excl

(Transmits this message when there is an error in the MIDI IN message (ex.data length).)

(25) DATA LOAD COMPLETED (ACK) T
F0, 42, 3g, 5D Excl Header
23 DATA LOAD COMPLETED
F7 End of Excl

(Transmits this message when DATA LOAD,PROCESSING have been completed.)

(26) DATA LOAD ERROR (NAC) T
F0, 42, 3g, 5D Excl Header
24 DATA LOAD ERROR
0ccc cccc Error Code (*22)
F7 End of Excl

(Transmits this message when DATA LOAD,PROCESSING have not been completed (ex. protected).)

(27) WRITE COMPLETED T

F0, 42, 3g, 5D Excl Header
 21 WRITE COMPLETED
 F7 End of Excl

(Transmits this message when DATA WRITE MIDI have been completed.)

(28) WRITE ERROR

T

F0, 42, 3g, 5D Excl Header
 22 WRITE ERROR
 0ccc cccc Error Code (*23)
 F7 End of Excl

(Transmits this message when DATA WRITE MIDI have not been completed.)

//////// * The each bank's value is same as value of the internal bank

*1

k = 0 : All Programs
 1 : 1 Bank Programs (Use b)
 2 : 1 Program (Use b & pp)

b = 0-4 : Bank A-E
 5 : Bank F

*2

k = 0 : All Combinations
 1 : 1 Bank Combinations (Use b)
 2 : 1 Combination (Use b & cc)

b = 0-5 : Bank A-F

*3

k = 0 : All Drumkits
 1 : 1 Drumkit (Use d)

d = 0-3F : Drumkit 0-63

*4 PROGRAM,COMBINATION BANK

b = 0-5 : Bank A-F

*5 DUMP DATA CONVERT

Convert 8 to 7
 Convert 7 to 8

*6 PROGRAM PARAMETER (IN CURRENT BUFFER) DUMP FORMAT

*PCM
 *MOSS

*7

v = 0 : Bank A-E
 1 : Bank A-F

k = 0 : All Bank Program (Use v)
 1 : 1 Bank Program (Use v & b)
 2 : 1 Program (Use b & pp)

b = 0-5 : Bank A-F

*8 PROGRAM PARAMETER (IN INTERNAL MEMORY) DUMP FORMAT

*9 COMBINATION PARAMETER (IN CURRENT BUFFER) DUMP FORMAT

*10

k = 0 : All Bank Combination
 1 : 1 Bank Combination (Use b)
 2 : 1 Combination (Use b & cc)

b = 0-5 : Bank A-F

*11 COMBINATION PARAMETER (IN INTERNAL MEMORY) DUMP FORMAT

*12 SEQUENCE DATA'S OFFSET,SIZE,ADDRESS FORMAT

12-1 : Sequence Data Size (4Bytes)
 'Seq Data Size' is a all song data's length. A unit is Byte.
 [Data Size (bit21~27)],
 [Data Size (bit14~20)],
 [Data Size (bit 7~13)],
 [Data Size (bit 0~ 6)]

12-2 : CSeqdataMgr

12-3 : CueLists Data

12-4 : Sequence Data

*13 GLOBAL DATA (IN INTERNAL MEMORY) DUMP FORMAT

*14

k = 0 : All Drumkits
 1 : 1 Drumkit (Use d)

d = 0-3F : Drumkit 0-63

*15 DRUMS DATA (IN INTERNAL MEMORY) DUMP FORMAT

*16

Program
 v = 0 : Bank A-E
 1 : Bank A-F

*17 All DATA (PROG,COMBI,GLOBAL,DRUMS,ARPPAT,SEQ) DUMP FORMAT

[Global Data],
 [Drums Data],
 [All Combination Parameter Data],
 [All Program Parameter Data],
 [CSeqdataMgr],
 [CueLists Data],
 [Sequence Data]

*18

mmmm = 0 : COMBI PLAY
 1 : COMBI EDIT
 2 : PROG PLAY
 3 : PROG EDIT
 4 : SEQUENCER
 5 : SONGPLAY
 7 : GLOBAL
 8 : DISK

*19 VALUE DATA FORMAT (Use at PARAMETER CHANGE, DRUM KIT PARAMETER CHANGE)

*20

oo : bit 0 = 0 : No MOSS Synthesizer, = 1 : MOSS Synthesizer is loaded
 ss : bit 0,1 = 0 : Note Receive is EVEN, = 1 : ODD, = 2 : ALL
 bit 3 = 0 : Seq Clock is internal, = 1 : External
 dd : bit 0 = 0 : Prog Mem is not protected, = 1 : protected
 bit 1 = 0 : Combi Mem is not protected, = 1 : protected
 bit 2 = 0 : Seq Mem is not protected, = 1 : protected
 bit 3 = 0 : Drums Mem is not protected, = 1 : protected

*21

cc = 0 : Received Data Length is wrong
 1 : Received Function code is not registered
 40 : Another type error

*22

cc = 0 : Dest Memory is protected
 1 : Dest Bank/Prog/Param is not exist
 2 : The mode is wrong
 3 : Memory over flow
 40 : Another type error

*23

cc = 0 : Dest Memory is protected
 1 : Dest Bank/Prog is not exist
 2 : The mode is wrong
 40 : Another type error

[TABLE 1] PROGRAM PARAMETERS (for PCM Synth)

2000.12.22

No. : No. in the PROGRAM DUMP DATA.

PARA No. : Parameter ID & SUB ID [Hex] for PARAMETER CHANGE.

Left side of ',' is Parameter ID, and right side is SUB ID.

No. (bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
00 : 15	PROGRAM NAME (Head) : PROGRAM NAME (Tail)	20~~7F		----
INSERT EFFECT PARAMETERS				
16 : 135	FX1~~5 (24Bytes * 5) (120 Bytes)			1E,00 : 23,??
MASTER EFFECT PARAMETERS				
136 : : 191	FX1~~2 (20Bytes * 2) Return, Chain & Master EQ (16 Bytes) (56 Bytes)			24,00 : : 27,??
KARMA COMMON PARAMETERS				
192	TEMPO	28~~F0 : 40~~240		1C,00
bit0	SW1 (for Scen1)	0:OFF, 1:ON		1C,01
bit1	SW2 (for Scen1)	0:OFF, 1:ON		1C,02

193	bit2	SW1 (for Scene2)	0:OFF, 1:ON		1C,03
	bit3	SW2 (for Scene2)	0:OFF, 1:ON		1C,04
	bit5	SCENE	0:1, 1:2		1C,05
	bit6	LATCH	0:OFF, 1:ON		1C,06
	bit7	ON/OFF	0:OFF, 1:ON		1C,07
194		SW1 NAME ID MSB			
			0~~197: 0~~407		1C,08
195		SW1 NAME ID LSB			
196		SW2 NAME ID MSB			
			0~~197: 0~~407		1C,09
197		SW2 NAME ID LSB			
198		KNOB1 NAME ID MSB			
			0~~197: 0~~407		1C,0A
199		KNOB1 NAME ID LSB			
200		KNOB 2~~8 NAME ID			1C,0B
:		Same as KNOB 1 NAME ID (198~~199)			:
213		(2 * 7 = 14 Bytes)			1C,11
214		KNOB 1 (for Scene1)	00~~7F : 0~~127		1C,12
215		KNOB 2~~8 (for Scene1)			1C,13
:		Same as KNOB 1 (for Scene1) (214)			:
221		(7 Bytes)			1C,19
222		KNOB 1 (for Scene2)	00~~7F : 0~~127		1C,1A
223		KNOB 2~~8 (for Scene2)			1C,1B
:		Same as KNOB 1 (for Scene2) (222)			:
229		(7 Bytes)			1C,21
KARMA COMMON PARAMETERS DYNAMIC MIDI 1					
230	b0~~2	(INPUT MODULE)	0	0 FIXED	----
	b3~~4	POLARITY	0:+, 1:-, 2:+/-, 3:-/+		1C,23
231		SOURCE	**1-8		1C,24
232		DESTINATION	**1-9		1C,25
233	bit0	(MODULE A)	1	1 FIXED	----
	bit1	(MODULE B)	0	0 FIXED	----
	bit2	(MODULE C)	0	0 FIXED	----
	bit3	(MODULE D)	0	0 FIXED	----
	bit4	(LAST TRIGED)	0	0 FIXED	----
	b5~~6	SRC ACTION	0:M, 1:T, 2:C		1C,2B
234		TOP	00~~7F : 0~~127		1C,2C
235		BOTTOM	00~~7F : 0~~127		1C,2D
236		DYNAMIC MIDI 2~~4			1C,2F
:		Same as DYNAMIC MIDI 1 (230~~235)			:
253		(6 * 3 Bytes)			1C,51
KARMA COMMON PARAMETERS RTPARMS 1					
254		GROUP	0:OFF, 1:MIX, 2:CTRL, 3:TRIG, 4:ZONE		1C,52
255		PARAMETER	**1-10		1C,53
256	bit0	MODULE A	0:OFF, 1:ON		1C,54
	bit1	(MODULE B)	0	0 FIXED	----
	bit2	(MODULE C)	0	0 FIXED	----
	bit3	(MODULE D)	0	0 FIXED	----
257		ASSIGN	**1-11		1C,58
258		MIN MSB			
			000~~1388 : 0~~5000		1C,59
259		MIN LSB			
260		MAX MSB			
			000~~1388 : 0~~5000		1C,5A

261	MAX LSB			
262	VALUE MSB			
263	VALUE LSB	000~~1388 : 0~~5000		1C,5B
264 : 333	RTPARMS 2~~8 Same as RTPARMS 1 (254~~263) (10 * 7 = 70 Bytes)			1C,5C : 1C,21
KARMA COMMON PARAMETERS CHORD TRIGGER 1				
334 : 341	CHORD TRIGGER 1 NOTE 1~~8 (8 Bytes)	00~~7F : C-1~~G9		----
342 : 365	CHORD TRIGGER 2~~4 Same as CHORD TRIGGER 1 (334~~341) (3 * 8 = 24 Bytes)			----
366 : 369	CHORD MEMORY 1~~4 VELOCITY (4 Bytes)	00~~7F : 0~~127		----
KARMA MODULE PARAMETERS				
370	GE SELECT MSB			
371	GE SELECT LSB	0~~???: 0~~???		1D,00
372	(INPUT CHANNEL)	10	10 FIXED	----
373	(OUTPUT CHANNEL)	10	10 FIXED	----
374	TRANPOSE	DC~~24 : -36~~36		1D,13
375	KEY ZONE TOP	00~~7F : C-1~~G9		1D,05
376	KEY ZONE BOTTOM	00~~7F : C-1~~G9		1D,06
377	bit0 ROOT POSITION b3~~5 FORCE RANGE b6~~7 CLK ADV. MODE	0:OFF, 1:ON 0:OFF, 1:LOWEST, 2:HIGHEST, 3:C3-B3[1], 4:C3-B3[2] 0:AUTO, 1:DYN, 2:AUTO+DYN1, 3:AUTO+DYN2		1D,1C 1D,14 1D,2D
378	b0~~2 CHORD MODE b4~~7 CLK ADV. SIZE	0:OFF, 1:1ST, 2:CHRD1, 3:CHRD2, 4:CHRD3 **1-12		1D,2F 1D,2E
379	CLOCK ADV. VEL	01~~7F : 1~~127		1D,30
380	DELAY START FIXED MSB			
381	DELAY START FIXED LSB	000~~1388 : 0~~5000		1D,15
382	DELAY START	**1-13		1D,16
383	b0~~3 (TRIGGER BY MODULE) bit4 (CUTOFF MODULE A) bit5 (CUTOFF MODULE B) bit6 (CUTOFF MODULE C) bit7 (CUTOFF MODULE D)	0 0 0 0 0	0 FIXED 0 FIXED 0 FIXED 0 FIXED 0 FIXED	---- ---- ---- ---- ----
384	(MODULE %)	0	0 FIXED	----
385	b0~~1 NOTE TRIGGER bit4 NOTE LATCH	0:ANY, 1:AKR, 2:1ST, 3DYN 0:OFF, 1:ON		1D,25 1D,29
386	b0~~1 ENV 1 TRIGGER b4~~6 ENV 1 LATCH	0:ANY, 1:AKR, 2:1ST, 3DYN 0:OFF, 1:SUS1, 2:REL1, 3:SUS2, 4:REL2		1D,26 1D,2A
387	b0~~1 ENV 2 TRIGGER b4~~6 ENV 2 LATCH	0:ANY, 1:AKR, 2:1ST, 3DYN 0:OFF, 1:SUS1, 2:REL1, 3:SUS2, 4:REL2		1D,27 1D,2B
388	b0~~1 ENV 3 TRIGGER b4~~6 ENV 3 LATCH	0:ANY, 1:AKR, 2:1ST, 3DYN 0:OFF, 1:SUS1, 2:REL1, 3:SUS2, 4:REL2		1D,28 1D,2C
389	bit0 TX. BEND bit1 TX. CC-A bit2 TX. CC-B	0:OFF, 1:ON 0:OFF, 1:ON 0:OFF, 1:ON		1D,0D 1D,0E 1D,0F

	bit3	QUANTIZE TRIGGER	0:OFF, 1:ON		1D,19	
	bit4	(TIMBZONE BYPASS)	0	0 FIXED	-----	
	bit5	(TIMB THRU)	0	0 FIXED	-----	
	bit6	THRU IN ZONE	0:OFF, 1:ON		1D,17	
	bit7	(RUN)	1	1 FIXED	-----	
390	bit0	RX. BEND	0:OFF, 1:ON		1D,07	
	bit1	RX. AFTER T	0:OFF, 1:ON		1D,08	
	bit2	RX. DAMPER	0:OFF, 1:ON		1D,09	
	bit3	RX. JS+Y	0:OFF, 1:ON		1D,0A	
	bit4	RX. JS-Y	0:OFF, 1:ON		1D,0B	
	bit5	RX. OTHER CC	0:OFF, 1:ON		1D,0C	
	bit6	THRU OUT ZONE	0:OFF, 1:ON		1D,18	
	bit7	TX. ENV 1	0:OFF, 1:ON		1D,10	
391	b0~~1	(RYTHM SEED)	0	0 FIXED	-----	
	b2~~3	(DURATION SEED)	0	0 FIXED	-----	
	b4~~5	(INDEX SEED)	0	0 FIXED	-----	
	b6~~7	(CLUSTER SEED)	0	0 FIXED	-----	
392	b0~~1	(VELOCITY SEED)	0	0 FIXED	-----	
	b2~~3	(CC-A/B SEED)	0	0 FIXED	-----	
	b4~~5	(DRUM SEED)	0	0 FIXED	-----	
	bit6	TX. ENV 2	0:OFF, 1:ON		1D,11	
	bit7	TX. ENV 3	0:OFF, 1:ON		1D,12	
393		TRANSPPOSE IN ZONE	DC~~24 : -36~~36		1D,37	
394		TRANSPPOSE OUT ZONE	DC~~24 : -36~~36		1D,38	
395		(Reserved)	0	0 FIXED	-----	
KARMA MODULE PARAMETERS GE PARAMETER 1						
396		ASSIGN	**1-11		1D,49	
397		POLARITY	0:+, 1:-		1D,59	
398		VALUE MSB				
399		VALUE LSB	????		1D,39	
400 : 459		KARMA MODULE PARAMETERS GE PARAMETER 2~~16 Same as KARMA GE PARAMETER 1 (396~~399) (4 * 15 = 60 Bytes)				1D,3A : 1D,68
KARMA MODULE PARAMETERS CC PARM 1						
460		TX.CC NUMBER	FF:OFF, 00~~5F : 0~~95		1D,1D	
461		CC VALUE	00~~7F : 0~~127		1D,21	
462 : 467		KARMA MODULE PARAMETERS CC PARM 2~~4 Same as KARMA CC PARM 1 (460~~461) (2 * 3 = 6 Bytes)				1D,1E : 1D,24
COMMON PARAMETERS						
468	b0~~1	OSCILLATOR MODE	0:Single, 1:Double, 2:Drums		00,01	
	bit2	ASSIGN	0:Poly, 1:Mono		00,02	
	bit3	LEGATO	0:OFF, 1:ON		00,03	
	b4~~5	PRIORITY	0:Low, 1:High, 2:Last		00,04	
	bit6	SINGLE TRIGGER	0:OFF, 1:ON		00,05	
	bit7	HOLD	0:OFF, 1:ON		00,06	
469	b0~~6	BUS SELECT	00:L/R,01~~05:IFX1~~5,06~~07:1~~2,0A:1/2,0C:Off		00,07	

	bit7	USE DKIT SETTING	0:OFF, 1:ON		00,08
470		CATEGORY	00~~0F : 0~~15		00,00
471		SCALE TYPE	00~~1A : **1-1		00,09
472		SCALE KEY	00~~0C : C~~B		00,0A
473		RANDOM INTENSITY	00~~07 : 0~~7		00,0B
	b0~~5	SW 1 ASSIGN TYPE	00~~0C : **1-2		00,0C
474	bit6	SW1 TOGGLE/MOMENTARY	0:Toggle, 1:Momentary		00,10
	bit7	SW 1 ON/OFF	0:OFF, 1:ON		00,0F
	b0~~5	SW 2 ASSIGN TYPE	00~~0C : **1-2		00,0D
475	bit6	SW2 TOGGLE/MOMENTARY	0:Toggle, 1:Momentary		00,11
	bit7	SW 2 ON/OFF	0:OFF, 1:ON		00,0F
	b0~~6	KNOB 1 ASSIGN TYPE	00~~7C : **1-3		00,12
476	bit7	REALTIME CONTROLS	0:A, 1:B		00,16
477		KNOB 2 ASSIGN	00~~7C : **1-3		00,13
478		KNOB 3 ASSIGN	00~~7C : **1-3		00,14
479		KNOB 4 ASSIGN	00~~7C : **1-3		00,15
PITCH EG					
480		START LEVEL	9D~~63 : -99~~99		01,00
481		ATTACK TIME	00~~63 : 00~~99		01,01
482		ATTACK LEVEL	9D~~63 : -99~~99		01,02
483		DECAY TIME	00~~63 : 00~~99		01,03
484		RELEASE TIME	00~~63 : 00~~99		01,04
485		RELEASE LEVEL	9D~~63 : -99~~99		01,05
486		A.M.SOURCE (LEVEL1)	00~~2A : **1-4	Alternate Modulation	01,08
487		INT BY A.M.(LEVEL1)	9D~~63 : -99~~99		01,09
488		A.M.SOURCE (LEVEL2)	00~~2A : **1-4	Alternate Modulation	01,0A
489		INT BY A.M.(LEVEL2)	9D~~63 : -99~~99		01,0B
490		A.M.SOURCE (TIME)	00~~2A : **1-4	Alternate Modulation	01,06
491		INT BY A.M.(TIME)	9D~~63 : -99~~99		01,07
	b0~~1	START (A.M.LEVEL1)	FF:-, 0:OFF, 1:+		01,0E
	b2~~3	ATTACK (A.M.LEVEL1)	FF:-, 0:OFF, 1:+		01,0F
492	b4~~5	START (A.M.LEVEL2)	FF:-, 0:OFF, 1:+		01,10
	b6~~7	ATTACK (A.M.LEVEL2)	FF:-, 0:OFF, 1:+		01,11
	b0~~1	ATTACK (A.M.TIME)	FF:-, 0:OFF, 1:+		01,0C
493	b2~~3	DECAY (A.M.TIME)	FF:-, 0:OFF, 1:+		01,0D
OSCILLATOR 1					
	bit7	HI START OFFSET	0:OFF, 1:ON		02,02
494	bit6	HI REVERSE	0:OFF, 1:ON		02,03
	b0~~5	HI SAMPLE NO.(MSB)			
495		HI SAMPLE NO.(LSB)	00~~03E7 : 00~~999		02,01
496		HI BANK	0:ROM, 1:RAM, ~~???	??? is depend on PCM option.	02,00
497		HI LEVEL	00~~7F : 00~~127		02,04
	bit7	LOW START OFFSET	0:OFF, 1:ON		02,07
498	bit6	LOW REVERSE	0:OFF, 1:ON		02,08
	b0~~6	LOW SAMPLE NO.(MSB)			
499		LOW SAMPLE NO.(LSB)	00~~03E7 : 00~~999		02,06

500		LOW BANK	0:ROM, 1:RAM, ~???	??? is depend on PCM option.	02,05
501		LOW LEVEL	00~~7F : 00~~127		02,09
502		DELAY START	00~~60,61 : **1-5		02,0A
503		VEL M.SAMPLE SW	01~~7F : 01~~127	(For Vel Split)	02,0B
504		VEL ZONE BOTTOM	01~~7F : 01~~127		02,0C
505		VEL ZONE TOP	01~~7F : 01~~127		02,0D
OSCILLATOR 1 LFO 1					
506	b0~~4	WAVEFORM	0~~14 : **1-6		03,00
	bit7	KEY SYNC.	0:OFF, 1:ON		03,01
507		FREQUENCY	00~~63 : 00~~99		03,02
508		OFFSET	9D~~63 : -99~~99		03,03
509		DELAY	00~~63 : 00~~99		03,04
510		FADE	00~~63 : 00~~99		03,05
511	bit7	MIDI/TEMPO SYNC.	0:OFF, 1:ON		03,0A
	b4~~6	SYNC BASE NOTE	0:16,1:8T,2:8,3:4T,4:4,5:2T,6:2,7:1		03,0B
	b0~~3	TIMES	00~~0F : 01~~16		03,0C
512		A.M.SOURCE (FREQ1)	00~~2A : **1-4	Alternate Modulation	03,06
513		INT BY A.M.(FREQ1)	9D~~63 : -99~~99		03,07
514		A.M.SOURCE (FREQ2)	00~~2A : **1-4	Alternate Modulation	03,08
515		INT BY A.M.(FREQ2)	9D~~63 : -99~~99		03,09
OSCILLATOR 1 LFO 2					
516 : 525		Same as OSCILLATOR 1 LFO 1 (506~~515) (10 Bytes)			04,00 : 04,0C
OSCILLATOR 1 PITCH					
526		OCTAVE	FE~~01 : 32~~4 [']		05,00
527		TRANPOSE	F4~~0C : -12~~12		05,01
528		TUNE (MSB)	FB50~~04B0 : -1200~~1200		05,02
529		TUNE (LSB)	[Cent]		
530		A.M.SOURCE (PITCH)	00~~2A : **1-4	Alternate Modulation	05,03
531		INT BY A.M.(PITCH)	8D~~73 : **1-7		05,04
532		PITCH SLOPE	F6~~14 : -1.0~~2.0		05,05
533		INT BY PITCH EG	8D~~73 : **1-7		05,06
534		A.M.SOURCE (P.EG)	00~~2A : **1-4	Alternate Modulation	05,07
535		INT BY A.M.(P.EG)	8D~~73 : **1-7		05,08
536		INT BY OSC-1 LFO 1	8D~~73 : **1-7		05,09
537		INT BY OSC-1 LFO 2	8D~~73 : **1-7		05,0A
538	bit0	PORTAMENTO	0:DIS, 1:ENA		05,0B
	bit1	PORTAMENTO FINGERED	0:OFF, 1:ON		05,0C
539		PORTAMENTO TIME	00~~7F : 00~~127		05,0D
540		PITCH BY JS(+X)	C4~~0C : -60~~12		05,0E
541		PITCH BY JS(-X)	C4~~0C : -60~~12		05,0F
542		PITCH BY RIBBON(X)	F4~~0C : -12~~12		05,10
543		(RESERVED)			---
544		LFO1 INT BY JS(+Y)	8D~~73 : **1-7		05,11
545		LFO2 INT BY JS(+Y)	8D~~73 : **1-7		05,12

546	A.M.SOURCE(LFO1INT)	00~~2A :	**1-4	Alternate Modulation	05,13
547	INT BY A.M.(LFO1INT)	8D~~73 :	**1-7		05,14
548	A.M.SOURCE(LFO2INT)	00~~2A :	**1-4	Alternate Modulation	05,15
549	INT BY A.M.(LFO2INT)	8D~~73 :	**1-7		05,16
OSCILLATOR 1 FILTER					
550	TYPE	0:LPF+RESO, 1:LPF+HPF			06,00
551	TRIM	00~~63 : 00~~99			06,01
552	RESONANCE	00~~63 : 00~~99			06,02
553	A.M.SOURCE(RESO.)	00~~2A :	**1-4	Alternate Modulation	06,03
554	INT BY A.M.(RESO.)	9D~~63 : -99~~99			06,04
555	A.M.SOURCE(EG)	00~~2A :	**1-4	Alternate Modulation	06,05
556	A.M.SOURCE(LFO1)	00~~2A :	**1-4	Alternate Modulation	06,06
557	A.M.SOURCE(LFO2)	00~~2A :	**1-4	Alternate Modulation	06,07
OSCILLATOR 1 FILTER A					
558	FREQUENCY	00~~63 : 00~~99			07,00
559	KBD TRACK INTENSITY	9D~~63 : -99~~99			07,01
560	A.M.SOURCE(MOD1)	00~~2A :	**1-4	Alternate Modulation	07,02
561	INT BY A.M.(MOD1)	9D~~63 : -99~~99			07,03
562	A.M.SOURCE(MOD2)	00~~2A :	**1-4	Alternate Modulation	07,04
563	INT BY A.M.(MOD2)	9D~~63 : -99~~99			07,05
564	EG INTENSITY	9D~~63 : -99~~99			07,06
565	EG VELOCITY	9D~~63 : -99~~99			07,07
566	INT BY LFO 1	9D~~63 : -99~~99			07,08
567	INT BY LFO 2	9D~~63 : -99~~99			07,09
568	LFO 1 BY JS(-Y)	9D~~63 : -99~~99			07,0A
569	LFO 2 BY JS(-Y)	9D~~63 : -99~~99			07,0B
570	INT BY A.M.(EG)	9D~~63 : -99~~99			Alternate Modulation 07,0C
571	INT BY A.M.(LFO1)	9D~~63 : -99~~99			Alternate Modulation 07,0D
572	INT BY A.M.(LFO2)	9D~~63 : -99~~99			Alternate Modulation 07,0E
OSCILLATOR 1 FILTER B					
573 : 587	Same as OSCILLATOR 1 FILTER B (558~~572) (15 Bytes)				08,00 : 08,0E
OSCILLATOR 1 FILTER EG					
588	START LEVEL	9D~~63 : -99~~99			09,00
589	ATTACK TIME	00~~63 : 00~~99			09,01
590	ATTACK LEVEL	9D~~63 : -99~~99			09,02
591	DECAY TIME	00~~63 : 00~~99			09,03
592	BREAK POINT LEVEL	9D~~63 : -99~~99			09,04
593	SLOPE TIME	00~~63 : 00~~99			09,05
594	SUSTAIN LEVEL	9D~~63 : -99~~99			09,06
595	RELEASE TIME	00~~63 : 00~~99			09,07
596	RELEASE LEVEL	9D~~63 : -99~~99			09,08
597	b7~~b6	RELEASE (A.M.TIME1)	FF:-, 0:OFF, 1:+		09,12
	b5~~b4	SLOPE (A.M.TIME1)	FF:-, 0:OFF, 1:+		09,11
	b3~~b2	DECAY (A.M.TIME1)	FF:-, 0:OFF, 1:+		09,10
	b1~~b0	ATTACK (A.M.TIME1)	FF:-, 0:OFF, 1:+		09,0F

598	b7~~b6	RELEASE (A.M.TIME2)	FF:-, 0:OFF, 1:+		09,16
	b5~~b4	SLOPE (A.M.TIME2)	FF:-, 0:OFF, 1:+		09,15
	b3~~b2	DECAY (A.M.TIME2)	FF:-, 0:OFF, 1:+		09,14
	b1~~b0	ATTACK (A.M.TIME2)	FF:-, 0:OFF, 1:+		09,13
599	b5~~b4	BREAK (A.M.LEVEL)	FF:-, 0:OFF, 1:+		09,19
	b3~~b2	ATTACK (A.M.LEVEL)	FF:-, 0:OFF, 1:+		09,18
	b1~~b0	START (A.M.LEVEL)	FF:-, 0:OFF, 1:+		09,17
600		A.M.SOURCE(TIME1)	00~~2A : **1-4	Alternate Modulation	09,09
601		INT BY A.M.(TIME1)	9D~~63 : -99~~99		09,0A
602		A.M.SOURCE(TIME2)	00~~2A : **1-4	Alternate Modulation	09,0B
603		INT BY A.M.(TIME2)	9D~~63 : -99~~99		09,0C
604		A.M.SOURCE(LEVEL)	00~~2A : **1-4	Alternate Modulation	09,0D
605		INT BY A.M.(LEVEL)	9D~~63 : -99~~99		09,0E
OSCILLATOR 1 FILTER KEYBOARD TRACK					
606		KEY LOW	00~~7F : C-1~~G9		0A,00
607		RAMP LOW	9D~~63 : -99~~99		0A,01
608		KEY HIGH	00~~7F : C-1~~G9		0A,02
609		RAMP HIGH	9D~~63 : -99~~99		0A,03
OSCILLATOR 1 AMPLIFIER					
610		LEVEL	00~~7F : 00~~127		0B,00
611		INT BY VELOCITY	9D~~63 : -99~~99		0B,01
612		A.M.SOURCE	00~~2A : **1-4	Alternate Modulation	0B,02
613		INT BY A.M.	9D~~63 : -99~~99		0B,03
614		INT BY LFO 1	9D~~63 : -99~~99		0B,04
615		INT BY LFO 2	9D~~63 : -99~~99		0B,05
616		A.M.SOURCE(LFO1)	00~~2A : **1-4	Alternate Modulation	0B,06
617		INT BY A.M.(LFO1)	9D~~63 : -99~~99		0B,07
618		A.M.SOURCE(LFO2)	00~~2A : **1-4	Alternate Modulation	0B,08
619		INT BY A.M.(LFO2)	9D~~63 : -99~~99		0B,09
OSCILLATOR 1 AMPLIFIER EG					
620		START LEVEL	00~~63 : 00~~99		0C,00
621		ATTACK TIME	00~~63 : 00~~99		0C,01
622		ATTACK LEVEL	00~~63 : 00~~99		0C,02
623		DECAY TIME	00~~63 : 00~~99		0C,03
624		BREAK POINT LEVEL	00~~63 : 00~~99		0C,04
625		SLOPE TIME	00~~63 : 00~~99		0C,05
626		SUSTAIN LEVEL	00~~63 : 00~~99		0C,06
627		RELEASE TIME	00~~63 : 00~~99		0C,07
628		A.M.SOURCE(TIME1)	00~~2A : **1-4	Alternate Modulation	0C,08
629		INT BY A.M.(TIME1)	9D~~63 : -99~~99		0C,09
630		A.M.SOURCE(TIME2)	00~~2A : **1-4	Alternate Modulation	0C,0A
631		INT BY A.M.(TIME2)	9D~~63 : -99~~99		0C,0B
632		A.M.SOURCE(LEVEL)	00~~2A : **1-4	Alternate Modulation	0C,0C
633		INT BY A.M.(LEVEL)	9D~~63 : -99~~99		0C,0D
	b0~~1	ATTACK (A.M.TIME1)	FF:-, 0:OFF, 1:+		0C,0E

634	b2~~3	DECAY (A.M.TIME1)	FF:-, 0:OFF, 1:+		0C,0F
	b4~~5	SLOPE (A.M.TIME1)	FF:-, 0:OFF, 1:+		0C,10
	b6~~7	RELEASE (A.M.TIME1)	FF:-, 0:OFF, 1:+		0C,11
635	b0~~1	ATTACK (A.M.TIME2)	FF:-, 0:OFF, 1:+		0C,12
	b2~~3	DECAY (A.M.TIME2)	FF:-, 0:OFF, 1:+		0C,13
	b4~~5	SLOPE (A.M.TIME2)	FF:-, 0:OFF, 1:+		0C,14
	b6~~7	RELEASE (A.M.TIME2)	FF:-, 0:OFF, 1:+		0C,15
636	b0~~1	START (A.M.LEVEL)	FF:-, 0:OFF, 1:+		0C,16
	b2~~3	ATTACK (A.M.LEVEL)	FF:-, 0:OFF, 1:+		0C,17
	b4~~5	BREAK (A.M.LEVEL)	FF:-, 0:OFF, 1:+		0C,18
637		(RESERVED)			----
OSCILLATOR 1 AMPLIFIER KEYBOARD TRACK					
638		KEY LOW	00~~7F : C-1~~G9		0D,00
639		RAMP LOW	9D~~63 : -99~~99		0D,01
640		KEY HIGH	00~~7F : C-1~~G9		0D,02
641		RAMP HIGH	9D~~63 : -99~~99		0D,03
OSCILLATOR 1 OUTPUT					
642		(RESERVED)			----
643		PAN	00:RND, 01~~7F : L001~~R127		0E,00
644		A.M.SOURCE(PAN)	00~~2A : **1-4	Alternate Modulation	0E,01
645		INT BY A.M.(PAN)	9D~~63 : -99~~99		0E,02
646		SEND1 (TO MFX1)	00~~7F: 00~~127		0E,03
647		SEND2 (TO MFX2)	00~~7F: 00~~127		0E,04
OSCILLATOR 2					
648	:	Same as OSCILLATOR 1 (494~~647)			0F,00
801	:	(154 Bytes)			1B,0E
802	:	(RESERVED)			----
803	:				

**1-1 : 0 : Equal Temperament 1 : Pure Major 2 : Pure Minor
 3 : Arabic 4 : Pythagoras 5 : Werkmeister
 6 : Kirnberger 7 : Slendro 8 : Pelog
 9 : Stretch A : User All Notes Scale

B~~1A : User Octave Scale 00 ~~15

**1-2 : 0: OFF 1: SW 1/2 Mod:CC#80/CC#81 2: Porta SW 3: Octave Down
 4: Octave Up 5: JS X Lock 6: JS+Y Lock 7: JS-Y Lock
 8: Ribbon Lock 9: JS X & Ribbon Lock A: JS+Y & Ribbon Lock B: JS-Y & Ribbon Lock
 C : After Touch Lock

**1-3 : 0: Off 1: Knob Mod.1:CC#17 2: Knob Mod.2:CC#19 3: Knob Mod.3:CC#20
 4: Knob Mod.4:CC#21 5: Master Volume 6: Portamento Time:CC#05 7: Volume:CC#07
 8: Post IFX Pan:CC#08 9: Pan:CC#10 A: Expression:CC#11 B: FX Control 1:CC#12
 C: FX Control 2:CC#13 D: LPF Cutoff:CC#74 E: Resonance/HPF:CC#71 F: Filter EG Int.:CC#79
 10: F/A Attack:CC#73 11: F/A Decay:CC#75 12: F/A Sustain:CC#70 13: F/A Release:CC#72
 14: Pitch LFO1 Spd:CC#76 15: Pitch LFO1 Dep:CC#77 16: Pitch LFO1 Dly:CC#78 17: SW 1 Mod.:CC#80
 18: SW 2 Mod.:CC#81 19: Foot Switch:CC#82 1A: MIDI CC#83 1B: MFX Send 1:CC#93
 1C : MFX Send 2:CC#91 1D~~7C : MIDI CC#00~~MIDI CC#95

**1-4 : 0 : Off 1 : Pitch EG 2 : Filter EG 3 : Amp EG
 4 : LFO 1 5 : LFO 2 6 : Flt KTrk +/- 7 : Flt KTrk +/-
 8 : Flt KTrk 0/+ 9 : Flt KTrk +/-0 A : Amp KTrk +/- B : Amp KTrk +/-
 C : Amp KTrk 0/+ D : Amp KTrk +/-0 E : Note Number F : Velocity
 10 : Poly After 11 : After Touch 12 : JS X 13 : JS+Y:CC#01
 14 : JS-Y:CC#02 15 : JS+Y & AT/2 16 : JS-Y & AT/2 17 : Pedal:CC#04
 18 : Ribbon:CC#16 19 : Slider:CC#18 1A : KnobMod1:#17 1B : KnobMod2:#19
 1C : KnobMod3:#20 1D : KnobMod4:#21 1E : KnobMod1 [+]
 20 : KnobMod3 [+]
 21 : KnobMod4 [+]
 22 : Damper:#64
 23 : Porta.SW:#65
 24 : Sostenuto:#66
 25 : Soft:CC#67
 26 : SW 1:CC#80
 27 : SW 2:CC#81
 28 : Foot SW:#82
 29 : MIDI:CC#83
 2A : Tempo

**1-5 : Data Time[mSec] Step
 00~~19 : 00~~ 50 (2mSec)

1A~~28 : 60~~ 200 (10mSec)
 29~~38 : 250~~1000 (50mSec)
 39~~60 : 1100~~5000 (100mSec)
 61 : KeyOff

**1-6 : 0 : Triangle 0 1 : Triangle 90 2 : Triangle Random 3 : Saw 0
 4 : Saw 180 5 : Square 6 : Sine 7 : Guitar
 8 : Exponential Triangle 9 : Exponential Saw Down A : Exponential Saw Up B : Step Triangle-4
 C : Step Triangle-6 D : Step Saw-4 E : Step Saw-6 F : Random1 (S/H)
 10 : Random2 (S/H) 11 : Random3 (S/H) 12 : Random4 (Vector) 13 : Random5 (Vector)
 14 : Random6 (Vector)

**1-7 : 8D~~C3 : -12.00~~ -1.20 (0.20 Step)
 C4~~CD : -1.00~~ -0.55 (0.05 Step)
 CE~~32 : -0.50~~ +0.50 (0.01 Step)
 33~~3C : +0.55~~ +1.00 (0.05 Step)
 3D~~73 : +1.20~~+12.00 (0.20 Step)

**1-8 : 0 : OFF 1 : JS+Y #01 2 : JS-Y #02 3 : Pedal #04 4 : Damper#64
 5 : Prta.SW#65 6 : FootSW#82 7 : MIDI CC#83 8 : Ribbon #16 9 : K.Knob1
 A : K.Knob2 B : K.Knob3 C : K.Knob4 D : K.Knob5 E : K.Knob6
 F : K.Knob7 10 : K.Knob8 11 : K.SW1 12 : K.SW2 13 : KARM OnOff
 14 : AfterT 15 : JS X 16 : Short Note 17 : Note 18 : Note In Z
 19 : Note Out Z 1A : White Note 1B : Black Note 1C : Velocity 1D : Vel In Z
 1E : Vel Out Z

**1-9 : 0 : OFF 1 : RTParm Ctrl 2 : Tempo 3 : Latch 4 : AutoTX SW
 5 : AutoTX Rng 6 : Module Stop 7 : Mdl Pause 8 : Repeat Stop 9 : Chord Scan
 A : Smart Scan B : Clock Adv. C : Trig Nt&Env D : Trig Notes E : Trig Envl
 F : Trig Env2 10 : Trig Env3 11 : Direct Index 12 : DI & MdlStop 13 : BufferLatch

**1-10 :
 GROUP : MIX
 1 : Transpose 2 : Trnsp.Oct 3 : Trnsp.Oct/5
 GROUP : CTRL
 0 : Quantize Trig 1 : Force Range 2 : Root Position 3 : ClkAdv Mode 4 : ClkAdv Size
 5 : ClkAdv Vel 6 : ClkAdv Chord
 GROUP : TRIG
 0 : Dly Start 1 : Dly Start ms 2 : Trig by Mod 3 : Module % 4 : Note Trigger
 5 : Note Latch 6 : Envl Trigger 7 : Envl Latch 8 : Env2 Trigger 9 : Env2 Latch
 A : Env3 Trigger B : Env3 Latch"
 GROUP : ZONE
 0 : Thru InZone 1 : Thru OutZone 2 : Key Zone Btm 3 : Key Zone Top 4 : Trnsp.InZ
 5 : Trnsp.OutZ 6 : Tr.Oct InZ 7 : Tr.Oct OutZ 8 : Tr.Oct/5 InZ 9 : Tr.Oct/5 OutZ

**1-11 : FF : OFF 00~~07 : KARMA KNOB 1~~8 08~~0F : KARMA KNOB SW 1~~8,
 10~~11 : KARMA SW 1~~2 12~~15 : DYN1~~4

**1-12 : 0 : 1/64T 1 : 1/32T 2 : 1/32 3 : 1/16T 4 : 1/16
 5 : 1/16D 6 : 1/8T 7 : 1/8 8 : 1/8D 9 : 1/4T
 A : 1/4 B : Event

**1-13 : 0 : OFF 1 : FIXED 2 : 1/64T 3 : 1/64 4 : 1/64D
 5 : 1/32T 6 : 1/32 7 : 1/32D 8 : 1/16T 9 : 1/16
 A : 1/16D B : 1/8T C : 1/8 D : 1/8D E : 1/4T
 F : 1/4 10 : 1/4D 11 : 1/2T 12 : 1/2 13 : 1/2D
 14 : 1/1T 15 : 1/1 16 : 1/1D 17 : 2/1 18 : 3/1
 19 : 4/1

[TABLE 2-1] MOSS PROGRAM PARAMETERS (for Optional EXB-MOSS)

No. : No. in the PROGRAM DUMP DATA.

PARA No. : Parameter ID & SUB ID [Hex] for PARAMETER CHANGE.

Left side of ',' is Parameter ID, and right side is SUB ID.

No. (bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
00	PROGRAM NAME (Head)	20~~7F		----
15	PROGRAM NAME (Tail)			
INSERT EFFECT PARAMETERS				
16	FX1~~5 (24Bytes * 5) (120 Bytes)			1E,00
135				4D,??
MASTER EFFECT PARAMETERS				
136	FX1~~2 (20Bytes * 2) Return, Chain & EQ (16 bytes) (56 Bytes)			24,00
191				4E,??
KARMA PARAMETERS				
192	Same as PROGRAM [TABLE 1] KARMA (192~~467) (276 Bytes)			4B,00
467				4C,24
COMMON PARAMETERS				

	b0~~1	(OSCILLATOR MODE)	3	3 Fixed (Means MOSS)	-----
468	b2~~3	VOICE ASSIGN	0:Mono Multi, 1:Mono Single, 2:Poly		28,03
	b4~~5	KEY PRIORITY	0:Low, 1:High, 2:Last	Available when MONO	28,02
	bit6	(Ignore)			
	bit7	HOLD	0:OFF, 1:ON		28,01
469		BUS SELECT	00:L/R,01~~05:IFX1~~5,06~~07:1~~2,0A:1/2,0C:Off		28,09
470		CATEGORY	00~~0F : 01~~16		28,00
471		SCALE TYPE	00~~1A : **1-1		28,0A
472		SCALE KEY	00~~0B : C ~~ B		28,0B
473		RANDOM INTENSITY	00~~63 : 0~~99		28,0C
474	b0~~5	SW 1 ASSIGN	00~~0C : **1-2		28,0D
	bit6	MODE	0:Toggle, 1:Momentary		28,11
	bit7	SW	0:OFF, 1:ON		28,0E
475		SW 2 (Same as SW 1 (474))			28,10~~12
476	b0~~6	KNOB 1 ASSIGN TYPE	00~~7C : **1-3		28,13
	bit7	REALTIME CONTROLS	0:A, 1:B		28,17
477		KNOB 2 ASSIGN	00~~7C : **1-3		28,14
478		KNOB 3 ASSIGN	00~~7C : **1-3		28,15
479		KNOB 4 ASSIGN	00~~7C : **1-3		28,16
RETRIGGER CONTROL					
480		RETRIGGER CONTROLLER	00,0B~~29 : *2-1		28,04
481		THRESHOLD VELOCITY	01~~7F : 1~~127		28,05
UNISON					
	b0~~1	UNISON TYPE	0:OFF, 1:2voices, 2:3voices, 3:6voices		28,06
482	bit2	(UNISON SW)	1	1 Fixed (Means Enable)	-----
	bit3	UNISON MODE	0:Fixed, 1:Dynamic		28,07
483		UNISON DETUNE	00~~63 : 0~~99		28,08
EG1					
484		START LEVEL	9D~~63 : -99~~99		36,00
485		ATTACK TIME	00~~63 : 0~~99		36,01
486		ATTACK LEVEL	9D~~63 : -99~~99		36,02
487		DECAY TIME	00~~63 : 0~~99		36,03
488		BREAK LEVEL	9D~~63 : -99~~99		36,04
489		SLOPE TIME	00~~63 : 0~~99		36,05
490		SUSTAIN LEVEL	9D~~63 : -99~~99		36,06
491		RELEASE TIME	00~~63 : 0~~99		36,07
492		RELEASE LEVEL	9D~~63 : -99~~99		36,08
493		LEVEL AMS	00~~29 : *2-1	Alternate Modulation	36,09
494		INTENSITY	9D~~63 : -99~~99		36,0A
495		VELOCITY CONTROL	9D~~63 : -99~~99		36,0B
496		TIME AMS 1	00~~29 : *2-1	Alternate Modulation	36,0C
497		INTENSITY	9D~~63 : -99~~99		36,0D
498		TIME AMS 2	00~~29 : *2-1	Alternate Modulation	36,0E
499		ATTACK INTENSITY	9D~~63 : -99~~99		36,0F
500		DECAY INTENSITY	9D~~63 : -99~~99		36,10

501	SLOPE INTENSITY	9D~~63 : -99~~99		36,11
502	RELEASE INTENSITY	9D~~63 : -99~~99		36,12
EG 2 ~~ 4				
503 : 521	EG 2 (Same as EG 1 (484 ~~ 502)) (19 Bytes)			See above 19 parameters. ParamID = 37
522 : 540	EG 3 (Same as EG 1 (484 ~~ 502)) (19 Bytes)			See above 19 parameters. ParamID = 38
541 : 559	EG 4 (Same as EG 1 (484 ~~ 502)) (19 Bytes)			See above 19 parameters. ParamID = 39
LFO 1				
b0~~5	WAVEFORM	00:Triangle 0, 01:Triangle 90, 02:Triangle Random, 03:Sine, 04:Saw Up 0, 05:Saw Up 180, 06:Saw Down 0, 07:Saw Down 180, 08:Square, 09:Random-S/H, 0A:Random-Vector, 0B:Step Triangle-4, 0C:Step Triangle-6, 0D:Step Saw-4, 0E:Step Saw-6, 0F:Exponential Triangle, 10:Exponential Saw Up, 11:Exponential Saw Down		3A,00
560 b6~~7	KEY SYNC.	0:Off, 1:byTimbre, 2:byVoice		3A,01
561	FREQUENCY	00~~C7 : 0~~199		3A,02
562	FREQUENCY AMS 1	00~~29 : *2-1	Alternate Modulation	3A,03
563	INTENSITY	9D~~63 : -99~~99		3A,04
564	FREQUENCY AMS 2	00~~29 : *2-1	Alternate Modulation	3A,05
565	INTENSITY	9D~~63 : -99~~99		3A,06
566	FADE IN	00~~63 : 0~~99		3A,07
567	AMPLITUDE AMS	00~~29 : *2-1	Alternate Modulation	3A,08
568	INTENSITY	9D~~63 : -99~~99		3A,09
569	OFFSET	CE~~32 : -50~~50		3A,0A
b0~~3	MIDI/TEMPO SYNC. TIMES	00~~0F : 1~~16		3A,0D
570 b4~~6	BASE NOTE	0:16,1:8T,2:8,3:4T,4:4,5:2T,6:2,7:1		3A,0C
bit7	SYNC. SW	0:OFF, 1:ON		3A,0B
LFO 2 ~~ 4				
571 : 581	LFO 2 (Same as LFO 1 (560 ~~ 570)) (11 Bytes)			See above 14 parameters. ParamID = 3B
582 : 592	LFO 3 (Same as LFO 1 (560 ~~ 570)) (11 Bytes)			See above 14 parameters. ParamID = 3C
593 : 603	LFO 4 (Same as LFO 1 (560 ~~ 570)) (11 Bytes)			See above 14 parameters. ParamID = 3D
OSC COMMON PITCH MODULATION				
604	JS(+X) INTENSITY	C4~~18 : -60~~24		29,04
605	JS(-X) INTENSITY	C4~~18 : -60~~24		29,05
606 b0~~3	PITCH BEND STEP JS(+X)	00:Continuous, 01:1/8, 02:1/4, 03:1/2, 05~~0F:01~~12		29,06
b4~~7	JS(-X)			29,07
607	COMMON PITCH AMS	00~~29 : *2-1	Alternate Modulation	29,02
608	INTENSITY	9D~~63 : -99~~99		29,03
PORTAMENTO				
609 bit0	ENABLE SW	0:OFF, 1:ON		29,08
bit1	FINGERED MODE SW	0:OFF, 1:ON		29,09

610	PORTAMENTO TIME	00~~63 : 0~~99		29,0A
611	TIME AMS	00~~29 : *2-1	Alternate Modulation	29,0B
612	INTENSITY	9D~~63 : -99~~99		29,0C
OSC 1				
613	OSC TYPE	(Single Size) 00:Standard, 01:Comb Filter, 02:VPM, 03:Resonance, 04:Ring Mod, 05:Cross Mod, 06:Sync Mod, 07:Organ Model, 08:E.Piano Model, (Double Size) 09:Brass Model, 0A:Reed Model, 0B:Plucked String Model, 0C:Bowed String Model		29,00
614	OCTAVE	00:-2[32'], 01:-1[16'], 02:0[8'], 03:1[4']		2A,00
615	TRANSPOSE	F4~~0C : -12~~12		2A,01
616	TUNE	CE~~32 : -50~~50 [cent]		2A,02
617	FREQUENCY OFFSET	9C~~64 : -10.0~~10.0 [Hz]		2A,03
618	PITCH SLOPE CENTER KEY	00~~7F : C-1~~G9		2A,04
619	RAMP LOW	CE~~64 : -1.00~~2.00	0.01 by step.	2A,05
620	RAMP HIGH	CE~~64 : -1.00~~2.00		2A,06
621	PITCH AMS 1	00~~29 : *2-1	Alternate Modulation	2A,07
622	INTENSITY	9D~~63 : -99~~99		2A,08
623	AMS 1 INTENSITY AMS	00~~29 : *2-1	Alternate Modulation	2A,09
624	INTENSITY	9D~~63 : -99~~99		2A,0A
625	PITCH AMS 2	00~~29 : *2-1	Alternate Modulation	2A,0B
626	INTENSITY	9D~~63 : -99~~99		2A,0C
627 : 664	OSC SET 38 bytes (Parameters are determined by OSC TYPE. See [Table 2-2].)			
OSC 2				
665	OSC TYPE	(SingleSize Only) 00:Standard, 01:Comb Filter, 02:VPM, 03:Resonance, 04:Ring Mod, 05:Cross Mod, 06:Sync Mod, 07:Organ Model, 08:E.Piano Model		29,01
666 : 716	OSC 2 (Much the same as OSC 1 (614 ~~ 664), except OSC TYPE.) (51 Bytes)			See above 51 parameters. ParamID = 2B
SUB OSC				
717	OCTAVE	00:-2[32'], 01:-1[16'], 02:0[8'], 03:1[4']		2C,00
718	TRANSPOSE	F4~~0C : -12~~12		2C,01
719	TUNE	CE~~32 : -50~~50 [cent]		2C,02
720	FREQUENCY OFFSET	9C~~64 : -10.0~~10.0 [Hz]		2C,03
721	PITCH SLOPE CENTER KEY	00~~7F : C-1~~G9		2C,04
722	RAMP LOW	CE~~64 : -1.00~~2.00	0.01 by step.	2C,05
723	RAMP HIGH	CE~~64 : -1.00~~2.00		2C,06
724	PITCH AMS 1	00~~29 : *2-1	Alternate Modulation	2C,07
725	INTENSITY	9D~~63 : -99~~99		2C,08
726	AMS 1 INTENSITY AMS	00~~29 : *2-1	Alternate Modulation	2C,09
727	INTENSITY	9D~~63 : -99~~99		2C,0A
728	PITCH AMS 2	00~~29 : *2-1	Alternate Modulation	2C,0B
729	INTENSITY	9D~~63 : -99~~99		2C,0C
730	WAVEFORM	0:Saw, 1:Square, 2:Triangle, 3:Sine		2D,00
NOISE GENERATOR				
731	NOISE FILTER TYPE	0:THRU, 1:LPF, 2:HPF, 3:BPF		2D,01
732	FILTER INPUT TRIM	00~~63 : 00~~99		2D,02

733	FILTER FREQUENCY	00~~63 : 00~~99		2D,03
734	FREQUENCY AMS 1	00~~29 : *2-1	Alternate Modulation	2D,04
735	INTENSITY	9D~~63 : -99~~99		2D,05
736	FREQUENCY AMS 2	00~~29 : *2-1	Alternate Modulation	2D,06
737	INTENSITY	9D~~63 : -99~~99		2D,07
738	FILTER RESONANCE	00~~63 : 00~~99		2D,08
OSC MIXER				
739	OSC 1 -> Mixer1 LEVEL	00~~63 : 00~~99		2E,00
740	LEVEL AMS	00~~29 : *2-1	Alternate Modulation	2E,01
741	INTENSITY	9D~~63 : -99~~99		2E,02
742 : 744	OSC 1 -> Mixer2	(Same as OSC 1 -> Mixer1 (739 ~ 741))		See above 3 parameters. SUB ID = 03~~05
745 : 747	OSC 2 -> Mixer1	(Same as OSC 1 -> Mixer1 (739 ~ 741))		See above 3 parameters. SUB ID = 06~~08
748 : 750	OSC 2 -> Mixer2	(Same as OSC 1 -> Mixer1 (739 ~ 741))		See above 3 parameters. SUB ID = 09~~0B
751 : 753	SUB OSC -> Mixer1	(Same as OSC 1 -> Mixer1 (739 ~ 741))		See above 3 parameters. SUB ID = 0C~~0E
754 : 756	SUB OSC -> Mixer2	(Same as OSC 1 -> Mixer1 (739 ~ 741))		See above 3 parameters. SUB ID = 0F~~11
757 : 759	Noise -> Mixer1	(Same as OSC 1 -> Mixer1 (739 ~ 741))		See above 3 parameters. SUB ID = 12~~14
760 : 762	Noise -> Mixer2	(Same as OSC 1 -> Mixer1 (739 ~ 741))		See above 3 parameters. SUB ID = 15~~17
763 : 765	Feedback -> Mixer1	(Same as OSC 1 -> Mixer1 (739 ~ 741))		See above 3 parameters. SUB ID = 18~~1A
766 : 768	Feedback -> Mixer2	(Same as OSC 1 -> Mixer1 (739 ~ 741))		See above 3 parameters. SUB ID = 1B~~1D
FILTER ROUTING				
769	bit0 (INPUT SW) OSC 1	1	1 Fixed (Means Enable)	-----
	bit1 OSC 2	1	1 Fixed (Means Enable)	-----
	bit2 SUB OSC	1	1 Fixed (Means Enable)	-----
	bit3 Noise	1	1 Fixed (Means Enable)	-----
FILTER 1				
770	b0~~1 ROUTING	0:Serial 1, 1:Serial 2, 2:Parallel		2F,00
	bit2 LINK SW	0:OFF, 1:ON		2F,01
FILTER 1				
771	FILTER TYPE	0:LPF(A), 1:HPF(A), 2:BPF(A), 3:BRF(A), 4:DualBP(A/B)		30,00
772	INPUT TRIM	00~~63 : 00~~99		30,01
773	FILTER FREQUENCY	00~~63 : 00~~99		30,02
774	FREQUENCY KBD TRACK KEY LOW	00~~7F : C-1~~G9		30,03
775	KEY HIGH	00~~7F : C-1~~G9		30,04
776	RAMP LOW	9D~~63 : -99~~99		30,05
777	RAMP HIGH	9D~~63 : -99~~99		30,06
778	FREQUENCY MOD. EG	00~~04 : EG1~~4, AmpEG	Alternate Modulation	30,07

779	INTENSITY	9D~~63 : -99~~99		30,08
780	FILTER AMS 1	00~~29 : *2-1	Alternate Modulation	30,09
781	INTENSITY	9D~~63 : -99~~99		30,0A
782	FILTER AMS 2	00~~29 : *2-1	Alternate Modulation	30,0B
783	INTENSITY	9D~~63 : -99~~99		30,0C
784	FILTER RESONANCE	00~~63 : 00~~99		30,0D
785	RESONANCE AMS	00~~29 : *2-1	Alternate Modulation	30,0E
786	INTENSITY	9D~~63 : -99~~99		30,0F
787	B:INPUT TRIM	00~~63 : 00~~99		32,00
788	B:FILTER FREQUENCY	00~~63 : 00~~99		32,01
789	B:FREQ. KBD TRACK KEY LOW	00~~7F : C-1~~G9		32,02
790	KEY HIGH	00~~7F : C-1~~G9		32,03
791	RAMP LOW	9D~~63 : -99~~99		32,04
792	RAMP HIGH	9D~~63 : -99~~99		32,05
793	B:FREQ. EG INTENSITY	9D~~63 : -99~~99	Alternate Modulation	32,06
794	B:FREQ. AMS 1 INT.	9D~~63 : -99~~99	Alternate Modulation	32,07
795	B:FREQ. AMS 2 INT.	9D~~63 : -99~~99	Alternate Modulation	32,08
796	B:FILTER RESONANCE	00~~63 : 00~~99		32,09
797	B:RESONANCE INT.	9D~~63 : -99~~99	Alternate Modulation	32,0A
798 : 824	FILTER 2 (Same as FILTER 1 (771 ~ 797)) (27 Bytes)		See above 27 parameters. ParamID = 31 or (B:) 33	
AMPLIFIER 1				
825	AMP LEVEL	00~~63 : 00~~99		34,00
826	KEYBOARD TRACK KEY LOW	00~~7F : C-1~~G9		34,01
827	KEY HIGH	00~~7F : C-1~~G9		34,02
828	RAMP LOW	9D~~63 : -99~~99		34,03
829	RAMP HIGH	9D~~63 : -99~~99		34,04
830	MOD.EG	00~~04 : EG1~~4, AmpEG		34,05
831	(Reserved)	99	99 Fixed	----
832	AMS	00~~29 : *2-1	Alternate Modulation	34,06
833	INTENSITY	9D~~63 : -99~~99		34,07
834 : 842	AMPLIFIER 2 (Same as AMPLIFIER 1 (825 ~ 833)) (9 Bytes)		See above 8 parameters. PARA No. :34,08~~34,0F	
AMP EG				
843	(Reserved)	0	0 Fixed	----
844	ATTACK TIME	00~~63 : 0~~99		35,00
845	ATTACK LEVEL	00~~63 : 0~~99		35,01
846	DECAY TIME	00~~63 : 0~~99		35,02
847	BREAK LEVEL	00~~63 : 0~~99		35,03
848	SLOPE TIME	00~~63 : 0~~99		35,04
849	SUSTAIN LEVEL	00~~63 : 0~~99		35,05
850	RELEASE TIME	00~~63 : 0~~99		35,06
851	(Reserved)	0	0 Fixed	----
852	LEVEL AMS	00~~29 : *2-1	Alternate Modulation	35,07

853	INTENSITY	9D~~63 : -99~~99		35,08
854	VELOCITY CONTROL	9D~~63 : -99~~99		35,09
855	TIME AMS 1	00~~29 : *2-1	Alternate Modulation	35,0A
856	INTENSITY	9D~~63 : -99~~99		35,0B
857	TIME AMS 2	00~~29 : *2-1	Alternate Modulation	35,0C
858	ATTACK INTENSITY	9D~~63 : -99~~99		35,0D
859	DECAY INTENSITY	9D~~63 : -99~~99		35,0E
860	SLOPE INTENSITY	9D~~63 : -99~~99		35,0F
861	RELEASE INTENSITY	9D~~63 : -99~~99		35,10
OUTPUT LEVEL/PAN				
862	PAN	00~~7F : L000~~R127		34,10
863	PAN AMS	00~~29 : *2-1	Alternate Modulation	34,11
864	INTENSITY	9D~~63 : -99~~99		34,12
865	OUTPUT LEVEL	00~~7F : 0~~127		34,13
866	SEND 1	00~~7F : 0~~127		34,14
867	SEND 2	00~~7F : 0~~127		34,15

[TABLE 2-2] MULTI OSCILLATOR PARAMETERS (for Optional EXB-MOSS)

No. : No. in the OSC SET (38 bytes).

SUB ID : Right side of '/' is SUB ID for OSC 2.

No. (bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	SUB ID
MULTI OSCILLATOR PARAMETERS 38 Bytes				
0:Standard			ParamID = 3E	
00	WAVE WAVE	0:Saw, 1:Pulse		00/16
01	WAVE EDGE	00~~63 : 0~~99		01/17
02	LEVEL	00~~63 : 0~~99		02/18
03	TRIANGLE LEVEL	00~~63 : 0~~99		03/19
04	SINE LEVEL	00~~63 : 0~~99		04/1A
05	PHASE SHIFT	9D~~63 : -99~~99		05/1B
06	WAVEFORM WAVEFORM	9D~~63 : -99~~99		06/1C
07	MOD. LFO	00~~03 : LFO 1 ~~ 4	Alternate Modulation	07/1D
08	INTENSITY	9D~~63 : -99~~99		08/1E
09	AMS	00~~29 : *2-1	Alternate Modulation	09/1F
10	INTENSITY	9D~~63 : -99~~99		0A/20
11	WAVE SHAPE INPUT LEVEL	00~~63 : 0~~99		0B/21
12	INPUT LEVEL AMS	00~~29 : *2-1	Alternate Modulation	0C/22
13	INTENSITY	9D~~63 : -99~~99		0D/23
14	OFFSET	9D~~63 : -99~~99		0E/24
15	TYPE	0:Clip, 1:Reso		0F/25
16	SHAPE	00~~63 : 0~~99		10/26
17	SHAPE AMS	00~~29 : *2-1	Alternate Modulation	11/27
18	INTENSITY	9D~~63 : -99~~99		12/28
19	BALANCE	00~~63 : 0~~99		13/29
20	BALANCE AMS	00~~29 : *2-1	Alternate Modulation	14/2A

21	INTENSITY	9D~~63 : -99~~99		15/2B
22~~37	(Reserved)	0	0 Fixed	-----
1:Comb Filter			ParamID = 3F	
00	INPUT INPUT WAVE	0:OSC2(1)+Noise, 1:Sub OSC+Noise, 2:Filter1+Noise, 3:Filter2+Noise, 4:Pulse Noise, 5:Impulse		00/0E
01	INPUT WAVE LEVEL	00~~63 : 0~~99		01/0F
02	NOISE LEVEL	00~~63 : 0~~99		02/10
03	PULSE WIDTH	00~~63 : 0~~99		03/11
04	INPUT LEVEL AMS	00~~29 : *2-1	Alternate Modulation	04/12
05	INTENSITY	9D~~63 : -99~~99		05/13
06	FEEDBACK FEEDBACK	00~~63 : 0~~99		06/14
07	AMS 1	00~~29 : *2-1	Alternate Modulation	07/15
08	INTENSITY	9D~~63 : -99~~99		08/16
09	AMS 2	00~~29 : *2-1	Alternate Modulation	09/17
10	INTENSITY	9D~~63 : -99~~99		0A/18
11	HIGH DAMP HIGH DAMP	00~~63 : 0~~99		0B/19
12	AMS	00~~29 : *2-1	Alternate Modulation	0C/1A
13	INTENSITY	9D~~63 : -99~~99		0D/1B
14~~37	(Reserved)	0	0 Fixed	-----
2:VPM			ParamID = 40	
00	CARRIER WAVE	0:Saw, 1:Square, 2:Triangle, 3:Sine		00/19
01	WAVE LEVEL	00~~63 : 0~~99		01/1A
02	LEVEL AMS 1	00~~29 : *2-1	Alternate Modulation	02/1B
03	INTENSITY	9D~~63 : -99~~99		03/1C
04	LEVEL AMS 2	00~~29 : *2-1	Alternate Modulation	04/1D
05	INTENSITY	9D~~63 : -99~~99		05/1E
06	WAVE SHAPE	00~~63 : 0~~99		06/1F
07	SHAPE AMS 1	00~~29 : *2-1	Alternate Modulation	07/20
08	INTENSITY	9D~~63 : -99~~99		08/21
09	SHAPE AMS 2	00~~29 : *2-1	Alternate Modulation	09/22
10	INTENSITY	9D~~63 : -99~~99		0A/23
11	WAVE SHAPE TYPE	00~~01 : 1~~2		0B/24
12	FEEDBACK	00~~63 : 0~~99		0C/25
13	MODULATOR FREQUENCY COARSE	00~~10 : 0.5~~16		0D/26
14	FREQUENCY FINE	CE~~32 : -50~~50		0E/27
15	FREQUENCY AMS 1	00~~29 : *2-1	Alternate Modulation	0F/28
16	INTENSITY	9D~~63 : -99~~99		10/29
17	FREQUENCY AMS 2	00~~29 : *2-1	Alternate Modulation	11/2A
18	INTENSITY	9D~~63 : -99~~99		12/2B
19	WAVE	0:Saw, 1:Square, 2:Triangle, 3:Sine 4:OSC2(1), 5:Sub OSC, 6:Filter1, 7:Filter2		13/2C
20	WAVE LEVEL	00~~63 : 0~~99		14/2D
21	LEVEL AMS 1	00~~29 : *2-1	Alternate Modulation	15/2E
22	INTENSITY	9D~~63 : -99~~99		16/2F

23	LEVEL AMS 2	00~~29 : *2-1	Alternate Modulation	17/30
24	INTENSITY	9D~~63 : -99~~99		18/31
25~~37	(Reserved)	0	0 Fixed	-----
3:Resonance			ParamID = 41	
00	INPUT INPUT WAVE	0:OSC2(1), 1:Sub OSC, 2:Noise, 3:Filter1, 4:Filter2		00/20
01	INPUT WAVE LEVEL	00~~63 : 0~~99		01/21
02	LEVEL AMS 1	00~~29 : *2-1	Alternate Modulation	02/22
03	INTENSITY	9D~~63 : -99~~99		03/23
04	LEVEL AMS 2	00~~29 : *2-1	Alternate Modulation	04/24
05	INTENSITY	9D~~63 : -99~~99		05/25
06	BPF 1 RESONANCE	00~~63 : 0~~99		06/26
07	FREQUENCY COARSE	00~~0F : 01~~16		07/27
08	FREQUENCY AMS	00~~29 : *2-1	Alternate Modulation	08/28
09	INTENSITY	F1~~0F : -15~~15		09/29
10	FREQUENCY FINE	9D~~63 : -99~~99		0A/2A
11	LEVEL	00~~63 : 0~~99		0B/2B
12	BPF 2 RESONANCE	00~~63 : 0~~99		0C/2C
13	FREQUENCY COARSE	00~~0F : 01~~16		0D/2D
14	FREQUENCY AMS	00~~29 : *2-1	Alternate Modulation	0E/2E
15	INTENSITY	F1~~0F : -15~~15		0F/2F
16	FREQUENCY FINE	9D~~63 : -99~~99		10/30
17	LEVEL	00~~63 : 0~~99		11/31
18	BPF 3 RESONANCE	00~~63 : 0~~99		12/32
19	FREQUENCY COARSE	00~~0F : 01~~16		13/33
20	FREQUENCY AMS	00~~29 : *2-1	Alternate Modulation	14/34
21	INTENSITY	F1~~0F : -15~~15		15/35
22	FREQUENCY FINE	9D~~63 : -99~~99		16/36
23	LEVEL	00~~63 : 0~~99		17/37
24	BPF 4 RESONANCE	00~~63 : 0~~99		18/38
25	FREQUENCY COARSE	00~~0F : 01~~16		19/39
26	FREQUENCY AMS	00~~29 : *2-1	Alternate Modulation	1A/3A
27	INTENSITY	F1~~0F : -15~~15		1B/3B
28	FREQUENCY FINE	9D~~63 : -99~~99		1C/3C
29	LEVEL	00~~63 : 0~~99		1D/3D
30	RESONANCE MODULATION AMS	00~~29 : *2-1	Alternate Modulation	1E/3E
31	INTENSITY	9D~~63 : -99~~99		1F/3F
32~~37	(Reserved)	0	0 Fixed	-----
4:Ring Modulation			ParamID = 42	
00	WAVE INPUT WAVE	0:OSC2(1), 1:Sub OSC, 2:Noise, 3:Filter1, 4:Filter2		00/09
01	CARRIER WAVE	0:Saw, 1:Square, 2:Triangle, 3:Sine		01/0A
02	MODULATION DEPTH DEPTH	00~~63 : 0~~99		02/0B
03	DEPTH AMS 1	00~~29 : *2-1	Alternate Modulation	03/0C

04	INTENSITY	9D~~63 : -99~~99		04/0D
05	DEPTH AMS 2	00~~29 : *2-1	Alternate Modulation	05/0E
06	INTENSITY	9D~~63 : -99~~99		06/0F
07	TYPE	00~~01 : 1~~2		07/10
08	WAVE EDGE	00~~63 : 0~~99		08/11
09~~37	(Reserved)	0	0 Fixed	-----
5:Cross Modulation			ParamID = 43	
00	WAVE INPUT WAVE	0:OSC2(1), 1:Sub OSC, 2:Noise, 3:Filter1, 4:Filter2		00/08
01	CARRIER WAVE	0:Saw, 1:Square, 2:Triangle, 3:Sine		01/09
02	MODULATION DEPTH DEPTH	00~~63 : 0~~99		02/0A
03	DEPTH AMS 1	00~~29 : *2-1	Alternate Modulation	03/0B
04	INTENSITY	9D~~63 : -99~~99		04/0C
05	DEPTH AMS 2	00~~29 : *2-1	Alternate Modulation	05/0D
06	INTENSITY	9D~~63 : -99~~99		06/0E
07	WAVE EDGE	00~~63 : 0~~99		07/0F
08~~37	(Reserved)	0	0 Fixed	-----
6:Sync Modulation			ParamID = 44	
00	WAVE INPUT WAVE	0:OSC2(1), 1:Sub OSC, 2:Noise, 3:Filter1, 4:Filter2		00/03
01	SLAVE WAVE	0:Saw, 1:Square, 2:Triangle, 3:Sine		01/04
02	WAVE EDGE	00~~63 : 0~~99		02/05
03~~37	(Reserved)	0	0 Fixed	-----
7:Organ Model			ParamID = 45	
00	DRAWBAR 1 WAVE	0:Sine1, 1:Sine2, 2:Sine3, 3:Triangle		00/19
01	HARMONICS COARSE	00~~0F: 1('16)~~16('1)		01/1A
02	HARMONICS FINE	9D~~63 : -99~~99		02/1B
03	LEVEL	00~~63 : 0~~99		03/1C
04	LEVEL AMS	00~~29 : *2-1	Alternate Modulation	04/1D
05	INTENSITY	9D~~63 : -99~~99		05/1E
06	PERCUSSION LEVEL	00~~63 : 0~~99		06/1F
07	DRAWBAR 2 WAVE	0:Sine1, 1:Sine2, 2:Sine3, 3:Triangle		07/20
08	HARMONICS COARSE	00~~0F: 1('16)~~16('1)		08/21
09	HARMONICS FINE	9D~~63 : -99~~99		09/22
10	LEVEL	00~~63 : 0~~99		0A/23
11	LEVEL AMS	00~~29 : *2-1	Alternate Modulation	0B/24
12	INTENSITY	9D~~63 : -99~~99		0C/25
13	PERCUSSION LEVEL	00~~63 : 0~~99		0D/26
14	DRAWBAR 3 WAVE	0:Sine1, 1:Sine2, 2:Sine3, 3:Triangle		0E/27
15	HARMONICS COARSE	00~~0F: 1('16)~~16('1)		0F/28
16	HARMONICS FINE	9D~~63 : -99~~99		10/29
17	LEVEL	00~~63 : 0~~99		11/2A
18	LEVEL AMS	00~~29 : *2-1	Alternate Modulation	12/2B
19	INTENSITY	9D~~63 : -99~~99		13/2C

20	PERCUSSION LEVEL	00~~63 : 0~~99		14/2D
21	PERCUSSION GENERATOR TRIGGER MODE	0:Single, 1:Multi		15/2E
22	DECAY	00~~63 : 0~~99		16/2F
23	LEVEL AMS	00~~29 : *2-1	Alternate Modulation	17/30
24	INTENSITY	9D~~63 : -99~~99		18/31
25~~37	(Reserved)	0	0 Fixed	-----
8:E.Piano Model			ParamID = 46	
00	HAMMER FORCE	00~~63 : 0~~99		00/0E
01	VELOCITY CURVE	FF:Off, 0~~63 : 0~~99		01/0F
02	WIDTH	00~~63 : 0~~99		02/10
03	CLICK NOISE LEVEL	00~~63 : 0~~99		03/11
04	TONE GENERATOR DECAY	00~~63 : 0~~99		04/12
05	RELEASE	00~~63 : 0~~99		05/13
06	OVERTONE LEVEL	00~~63 : 0~~99		06/14
07	FREQUENCY	00~~63 : 0~~99		07/15
08	DECAY	00~~63 : 0~~99		08/16
09	PICKUP LOCATION	00~~63 : 0~~99		09/17
10	LOCATION AMS	00~~29 : *2-1	Alternate Modulation	0A/18
11	INTENSITY	9D~~63 : -99~~99		0B/19
12	LOW EQ FREQUENCY	00~~31 : 0~~49		0C/1A
13	GAIN	EE~~12 : -18~~18 [dB]		0D/1B
14~~37	(Reserved)	0	0 Fixed	-----
9:Brass Model			ParamID = 47	
00	INSTRUMENT TYPE	00~~02:Brass1~~3, 03~~04:Horn1~~2, 05:Reed Brass		00
01	bit0 JUMP BEND SW JS(+X)	0:OFF, 1:ON		01
	bit1 JS(-X)	0:OFF, 1:ON		02
02	BREATH PRESSURE MOD. EG	00~~04 : EG 1~~4, AmpEG	Alternate Modulation	03
03	INTENSITY	9D~~63 : -99~~99		04
04	AMS 1	00~~29 : *2-1	Alternate Modulation	05
05	INTENSITY	9D~~63 : -99~~99		06
06	AMS 2	00~~29 : *2-1	Alternate Modulation	07
07	INTENSITY	9D~~63 : -99~~99		08
08	(Reserved)	0	0 Fixed	-----
09	LIP CHARACTER LIP	00~~63 : 0~~99		09
10	AMS	00~~29 : *2-1	Alternate Modulation	0A
11	INTENSITY	9D~~63 : -99~~99		0B
12~~14	(Reserved)			-----
15	BELL CHARACTER TONE	00~~63 : 0~~99		0C
16	RESONANCE	00~~63 : 0~~99		0D
17	BREATH NOISE	00~~63 : 0~~99		0E
18~~27	(Reserved)			-----

28	PEAKING EQ FREQUENCY	00~~31 : 0~~49		0F
29	Q	00~~1D : 0~~29		10
30	GAIN	EE~~12 : -18~~18 [dB]		11
31	STRENGTH	00~~63 : 0~~99		12
32~~37	(Reserved)			-----
10:Reed Model			ParamID = 48	
00	INSTRUMENT TYPE	00~~02:Hard Sax 1~~3, 03~~04:Soft Sax 1~~2, 05~~06:Double Reed 1~~2, 07:Bassoon, 08:Clarinet, 09~~0A:Flute 1~~2, 0B:Pan Flute, 0C:Ocarina, 0D:Shakuhachi, 0E~~0F:Harmonica 1~~2, 10:Reed Synth		00
01	bit0 JUMP BEND SW JS(+X)	0:OFF, 1:ON		01
	bit1 JS(-X)	0:OFF, 1:ON		02
02	BREATH PRESSURE MOD. EG	00~~04 : EG 1~~4, AmPEG	Alternate Modulation	03
03	INTENSITY	9D~~63 : -99~~99		04
04	AMS 1	00~~29 : *2-1	Alternate Modulation	05
05	INTENSITY	9D~~63 : -99~~99		06
06	AMS 2	00~~29 : *2-1	Alternate Modulation	07
07	INTENSITY	9D~~63 : -99~~99		08
08~~12	(Reserved)			-----
13	BREATH NOISE	00~~63 : 0~~99		09
14~~25	(Reserved)			-----
26	REED CHARACTER AMS	00~~29 : *2-1	Alternate Modulation	0A
27	INTENSITY	9D~~63 : -99~~99		0B
28	BELL CHARACTER TONE	00~~63 : 0~~99		0C
29	RESONANCE	00~~63 : 0~~99		0D
30	PEAKING EQ FREQUENCY	00~~31 : 0~~49		0E
31	Q	00~~1D : 0~~29		0F
32	GAIN	EE~~12 : -18~~18 [dB]		10
33	(Reserved)			-----
34	WAVE SHAPE OFFSET	9D~~63 : -99~~99		11
35	b0~~6 SHAPE	00~~63 : 0~~99		13
	bit7 TYPE	0:Clip, 1:Reso		12
36	SHAPE AMS	00~~29 : *2-1	Alternate Modulation	14
37	INTENSITY	9D~~63 : -99~~99		15
11:Plucked String Model			ParamID = 49	
00	ATTACK LEVEL	00~~63 : 0~~99		00
01	VELOCITY CTRL	9D~~63 : -99~~99		01
02	CURVE UP	00~~63 : 0~~99		02
03	VELOCITY CTRL	9D~~63 : -99~~99		03
04	CURVE DOWN	00~~63 : 0~~99		04
05	VELOCITY CTRL	9D~~63 : -99~~99		05
06	NOISE LEVEL	00~~63 : 0~~99		06
07	VELOCITY CTRL	9D~~63 : -99~~99		07

08	STRING PICKING POINT	00~~63 : 0~~99		08
09	POINT AMS	00~~29 : *2-1	Alternate Modulation	09
10	INTENSITY	9D~~63 : -99~~99		0A
11	DISPERSION	00~~63 : 0~~99		0B
12	DISPERSION AMS	00~~29 : *2-1	Alternate Modulation	0C
13	INTENSITY	9D~~63 : -99~~99		0D
14	DAMP	00~~63 : 0~~99		0E
15	DAMP KBD TRACK	9D~~63 : -99~~99		0F
16	DAMP AMS	00~~29 : *2-1	Alternate Modulation	10
17	INTENSITY	9D~~63 : -99~~99		11
18	DECAY	00~~63 : 0~~99		12
19	DECAY KBD TRACK	9D~~63 : -99~~99		13
20	RELEASE	00~~63 : 0~~99		14
21	HARMONICS HARMONICS POINT	00~~63 : 0~~99		15
22	HARMONICS CTRL	00~~29 : *2-1		16
23	INTENSITY	9D~~63 : -99~~99		17
24	PICKUP SW	0:OFF, 1:ON		18
25	LOCATION	00~~63 : 0~~99		19
26	LOCATION AMS	00~~29 : *2-1	Alternate Modulation	1A
27	INTENSITY	9D~~63 : -99~~99		1B
28	LOW EQ FREQUENCY	00~~31 : 0~~49		1C
29	GAIN	EE~~12 : -18~~18 [dB]		1D
30	LOW BOOST	00~~63 : 0~~99		1E
31~~37	(Reserved)	0	0 Fixed	----
12:Bowed String Model			ParamID = 4A	
00	BOW SPEED MOD. EG	00~~04 : EG 1~~4, AmpEG	Alternate Modulation	00
01	INTENSITY	9D~~63 : -99~~99		01
02	AMS 1	00~~29 : *2-1	Alternate Modulation	02
03	INTENSITY	9D~~63 : -99~~99		03
04	AMS 2	00~~29 : *2-1	Alternate Modulation	04
05	INTENSITY	9D~~63 : -99~~99		05
06	DIFFERENTIAL	0:OFF, 1:ON		06
07	BOW PRESSURE MOD. EG	00~~04 : EG 1~~4, AmpEG	Alternate Modulation	07
08	INTENSITY	9D~~63 : -99~~99		08
09	AMS	00~~29 : *2-1	Alternate Modulation	09
10	INTENSITY	9D~~63 : -99~~99		0A
11	ROSIN	00~~63 : 0~~99		0B
12	STRING BOWING POINT	00~~63 : 0~~99		0C
13	POINT AMS	00~~29 : *2-1	Alternate Modulation	0D
14	INTENSITY	9D~~63 : -99~~99		0E
15	DAMP	00~~63 : 0~~99		0F
	DAMP KBD TRACK			

16	KEY	00~~7F : C-1~~G9		10
17	RAMP LOW	9D~~63 : -99~~99		11
18	RAMP HIGH	9D~~63 : -99~~99		12
19	DAMP AMS	00~~29 : *2-1	Alternate Modulation	13
20	INTENSITY	9D~~63 : -99~~99		14
21	DISPERSION	00~~63 : 0~~99		15
22	DISPERSION AMS	00~~29 : *2-1	Alternate Modulation	16
23	INTENSITY	9D~~63 : -99~~99		17
24	REFLECTION	00~~63 : 0~~99		18
25	REFLECTION AMS	00~~29 : *2-1	Alternate Modulation	19
26	INTENSITY	9D~~63 : -99~~99		1A
27	PEAKING EQ FREQUENCY	00~~31 : 0~~49		1B
28	Q	00~~1D : 0~~29		1C
29	GAIN	EE~~12 : -18~~18 [dB]		1D
30~~37	(Reserved)			----

*2-1 : Alternate Modulation Source for MOSS

00 : Off,	01 : EG 1,	02 : EG 2,	03 : EG 3,
04 : EG 4,	05 : Amp EG,	06 : LFO 1,	07 : LFO 2,
08 : LFO 3,	09 : LFO 4,	0A : Portamento,	0B : Note No. Linear,
0C : Note No. Exp.,	0D : Note Split High,	0E : Note Split Low,	0F : Velocity Soft,
10 : Velocity Med.,	11 : Velocity Hard,	12 : After Touch,	13 : JS X,
14 : JS +Y:CC#01,	15 : JS -Y:CC#02,	16 : JS +Y & AT/2,	17 : JS -Y & AT/2,
18 : Pedal:CC#04,	19 : Ribbon:CC#16,	1A : Ribbon +X,	1B : Ribbon -X,
1C : Slider:CC#18,	1D : KnobMod1:#17,	1E : KnobMod2:#19,	1F : KnobMod3:#20,
20 : KnobMod4:#21,	21 : KnobMod1 [+],	22 : KnobMod2 [+],	23 : KnobMod3 [+],
24 : KnobMod4 [+],	25 : Damper:#64,	26 : SW 1:CC#80,	27 : SW 2:CC#81,
28 : Foot SW:#82,	29 : MIDI:CC#83		

[TABLE 3] 1 COMBINATION PARAMETERS

PARA No. : Parameter ID & SUB ID [HEX] for PARAMETER CHANGE. n : Timbre No.(1~~8:T1~~T8)

No. (bit)	PARAMETER	DATA(HEX) : VALUE	DESCRIPTION	PARA No.
00 : 15	COMBI. NAME (Head) : COMBI. NAME (Tail)	20~~7F		----
INSERT EFFECT PARAMETERS				
16 : 135	FX1~~5 (24Bytes * 5) (120 Bytes)			0C,00 : 11,??
MASTER EFFECT PARAMETERS				
136 : : 191	FX1~~2 (20Bytes * 2) Return, Chain & EQ (16 Bytes) (56 Bytes)			12,00 : : 15,??
KARMA COMMON PARAMETERS				
192	TEMPO	28~~F0 : 40~~240		09,00
193	bit0 SW1 (for Scen1)	0:OFF, 1:ON		09,01
	bit1 SW2 (for Scen1)	0:OFF, 1:ON		09,02
	bit2 SW1 (for Scene2)	0:OFF, 1:ON		09,03
	bit3 SW2 (for Scene2)	0:OFF, 1:ON		09,04
	bit5 SCENE	0:1, 1:2		09,05
	bit6 LATCH	0:OFF, 1:ON		09,06
	bit7 ON/OFF	0:OFF, 1:ON		09,07
194	SW1 NAME ID MSB	0~~197: 0~~407		09,08
195	SW1 NAME ID LSB			
196	SW2 NAME ID MSB			
		0~~197: 0~~407		09,09

197	SW2 NAME ID LSB			
198	KNOB1 NAME ID MSB			
199	KNOB1 NAME ID LSB	0~~197: 0~~407		09,0A
200 : 213	KNOB 2~~8 NAME ID Same as KNOB 1 NAME ID (198~~199) (2 * 7 = 14 Bytes)			09,0B : 09,11
214	KNOB 1 (for Scene1)	00~~7F : 0~~127		09,12
215 : 221	KNOB 2~~8 (for Scene1) Same as KNOB 1 (for Scene1) (214) (7 Bytes)			09,13 : 09,19
222	KNOB 1 (for Scene2)	00~~7F : 0~~127		09,1A
223 : 229	KNOB 2~~8 (for Scene2) Same as KNOB 1 (for Scene2) (222) (7 Bytes)			09,1B : 09,21
KARMA COMMON PARAMETERS DYNAMIC MIDI 1				
230	b0~~2 INPUT MODULE	0~~3 : A~~D		09,22
	b3~~4 POLARITY	0:+, 1:-, 2:+/-, 3:-/+		09,23
231	SOURCE	**1-8		09,24
232	DESTINATION	**1-9		09,25
233	bit0 MODULE A	0:OFF, 1:ON		09,26
	bit1 MODULE B	0:OFF, 1:ON		09,27
	bit2 MODULE C	0:OFF, 1:ON		09,28
	bit3 MODULE D	0:OFF, 1:ON		09,29
	bit4 LAST TRIGED	0:OFF, 1:ON		09,2A
	b5~~6 SRC ACTION	0:M, 1:T, 2:C		09,2B
234	TOP	00~~7F : 0~~127		09,2C
235	BOTTOM	00~~7F : 0~~127		09,2D
236 : 253	DYNAMIC MIDI 2~~4 Same as DYNAMIC MIDI 1 (230~~235) (6 * 3 Bytes)			09,2F : 09,51
KARMA COMMON PARAMETERS RTPARMS 1				
254	GROUP	0:OFF, 1:MIX, 2:CTRL, 3:TRIG, 4:ZONE		09,52
255	PARAMETER	**1-10		09,53
256	bit0 MODULE A	0:OFF, 1:ON		09,54
	bit1 MODULE B	0:OFF, 1:ON		09,55
	bit2 MODULE C	0:OFF, 1:ON		09,56
	bit3 MODULE D	0:OFF, 1:ON		09,57
257	ASSIGN	**1-11		09,58
258	MIN MSB			
259	MIN LSB	000~~1388 : 0~~5000		09,59
260	MAX MSB			
261	MAX LSB	000~~1388 : 0~~5000		09,5A
262	VALUE MSB			
263	VALUE LSB	000~~1388 : 0~~5000		09,5B
264 : 333	RTPARMS 2~~8 Same as RTPARMS 1 (254~~263) (10 * 7 = 70 Bytes)			09,5C : 09,A1
KARMA COMMON PARAMETERS CHORD TRIGGER 1				
334 : 341	CHORD TRIGGER 1 NOTE 1~~8 (8 Bytes)	00~~7F : C-1~~G9		-----
342	CHORD TRIGGER 2~~4			

365	:	Same as CHORD TRIGGER 1 (334~~341) (3 * 8 = 24 Bytes)		----
366	:	CHORD MEMORY 1~~4	00~~7F : 0~~127	----
369	:	VELOCITY (4 Bytes)		
KARMA MODULE PARAMETERS A				
370	:	GE SELECT MSB		
371	:	GE SELECT LSB	0~~???: 0~~???	0A,00
372	:	INPUT CHANNEL	0~~F : 1~~15, 10:G	0A,03
373	:	OUTPUT CHANNEL	0~~F : 1~~15, 10:G	0A,04
374	:	TRANSPOSE	DC~~24 : -36~~36	0A,13
375	:	KEY ZONE TOP	00~~7F : C-1~~G9	0A,05
376	:	KEY ZONE BOTTOM	00~~7F : C-1~~G9	0A,06
377	bit0	ROOT POSITION	0:OFF, 1:ON	0A,1C
	b3~~5	FORCE RANGE	0:OFF, 1:LOWEST, 2:HIGHEST, 3:C3-B3[1], 4:C3^B3[2]	0A,14
	b6~~7	CLK ADV. MODE	0:AUTO, 1:DYN, 2:AUTO+DYN1, 3:AUTO+DYN2	0A,2D
378	b0~~2	CHORD MODE	0:OFF, 1:1ST, 2:CHRD1, 3:CHRD2, 4:CHRD3	0A,2F
	b6~~7	CLK ADV. SIZE	**1-12	0A,2E
379	:	CLOCK ADV. VEL	01~~7F : 1~~127	0A,30
380	:	DELAY START FIXED MSB		
381	:	DELAY START FIXED LSB	000~~1388 : 0~~5000	0A,15
382	:	DELAY START	**1-13	0A,16
383	b0~~3	TRIGGER BY MODULE	0:OFF, 1~~4:A~~D	0A,31
	bit4	CUTOFF MODULE A	0:OFF, 1:ON	0A,33
	bit5	CUTOFF MODULE B	0:OFF, 1:ON	0A,34
	bit6	CUTOFF MODULE C	0:OFF, 1:ON	0A,35
	bit7	CUTOFF MODULE D	0:OFF, 1:ON	0A,36
384	:	MODULE %	0~~64:0~~100	0A,32
385	b0~~1	NOTE TRIGGER	0:ANY, 1:AKR, 2:1ST, 3DYN	0A,25
	bit4	NOTE LATCH	0:OFF, 1:ON	0A,29
386	b0~~1	ENV 1 TRIGGER	0:ANY, 1:AKR, 2:1ST, 3DYN	0A,26
	b4~~6	ENV 1 LATCH	0:OFF, 1:SUS1, 2:REL1, 3:SUS2, 4:REL2	0A,2A
387	b0~~1	ENV 2 TRIGGER	0:ANY, 1:AKR, 2:1ST, 3DYN	0A,27
	b4~~6	ENV 2 LATCH	0:OFF, 1:SUS1, 2:REL1, 3:SUS2, 4:REL2	0A,2B
388	b0~~1	ENV 3 TRIGGER	0:ANY, 1:AKR, 2:1ST, 3DYN	0A,28
	b4~~6	ENV 3 LATCH	0:OFF, 1:SUS1, 2:REL1, 3:SUS2, 4:REL2	0A,2C
389	bit0	TX. BEND	0:OFF, 1:ON	0A,0D
	bit1	TX. CC-A	0:OFF, 1:ON	0A,0E
	bit2	TX. CC-B	0:OFF, 1:ON	0A,0F
	bit3	QUANTIZE TRIGGER	0:OFF, 1:ON	0A,19
	bit4	TIMBZONE BYPASS	0:OFF, 1:ON	0A,1B
	bit5	TIMB THRU	0:OFF, 1:ON	0A,1A
	bit6	THRU IN ZONE	0:OFF, 1:ON	0A,17
	bit7	RUN	0:OFF, 1:ON	0A,02
390	bit0	RX. BEND	0:OFF, 1:ON	0A,07
	bit1	RX. AFTER T	0:OFF, 1:ON	0A,08
	bit2	RX. DAMPER	0:OFF, 1:ON	0A,09

	bit3	RX. JS+Y	0:OFF, 1:ON		0A,0A
	bit4	RX. JS-Y	0:OFF, 1:ON		0A,0B
	bit5	RX. OTHER CC	0:OFF, 1:ON		0A,0C
	bit6	THRU OUT ZONE	0:OFF, 1:ON		0A,18
	bit7	TX. ENV 1	0:OFF, 1:ON		0A,10
391	b0~~1	RYTHM SEED	0~~3 : 1~~4		0A,69
	b2~~3	DURATION SEED	0~~3 : 1~~4		0A,6A
	b4~~5	INDEX SEED	0~~3 : 1~~4		0A,6B
	b6~~7	CLUSTER SEED	0~~3 : 1~~4		0A,6C
392	b0~~1	VELOCITY SEED	0~~3 : 1~~4		0A,6D
	b2~~3	CC-A/B SEED	0~~3 : 1~~4		0A,6E
	b4~~5	DRUM SEED	0~~3 : 1~~4		0A,6F
	bit6	TX. ENV 2	0:OFF, 1:ON		0A,11
	bit7	TX. ENV 3	0:OFF, 1:ON		0A,12
393		TRANPOSE IN ZONE	DC~~24 : -36~~36		0A,37
394		TRANPOSE OUT ZONE	DC~~24 : -36~~36		0A,38
395		(Reserved)	0	0 FIXED	-----
KARMA MODULE PARAMETERS GE PARAMETER 1					
396		ASSIGN	**1-11		0A,49
397		POLARITY	0:+, 1:-		0A,59
398		VALUE MSB			0A,39
399		VALUE LSB	????		
400 : 459		KARMA MODULE PARAMETERS GE PARAMETER 2~~16 Same as KARMA GE PARAMETER 1 (396~~399) (4 * 15 = 60 Bytes)			0A,3A : 0A,68
KARMA MODULE PARAMETERS CC PARM 1					
460		TX.CC NUMBER	FF:OFF, 00~~5F : 0~~95		0A,1D
461		CC VALUE	00~~7F : 0~~127		0A,21
462 : 467		KARMA MODULE PARAMETERS CC PARM 2~~4 Same as KARMA CC PARM 1 (460~~461) (2 * 3 = 6 Bytes)			0A,1E : 0A,24
468 : 761		KARMA MODULE PARAMETERS B~~D Same as KARMA MODULE PARAMETERS A (370 - 467) (98 * 3 = 294 Bytes)			0B,1E : 0D,24
COMMON PARAMETERS					
762	b0~~3	CATEGORY	00~~0F : 0~~15		00,00
	b4~~7	MOSS BUS SELECT	00~~07 : TIMBRE1~~8		00,0F
763		SCALE TYPE	00~~1A : **1-1		00,01
764		SCALE KEY	00~~0B : C~~B		00,02
765		RANDOM INTENSITY	00~~07 : 0~~7	Normal = 0	00,03
766	b0~~5	SW 1 ASSIGN TYPE	00~~0C : **1-2		00,04
	bit6	SW1 TOGGLE/MOMENTARY	0:Toggle, 1:Momentary		00,08
	bit7	SW 1 ON/OFF	0:OFF, 1:ON		00,06
767	b0~~5	SW 2 ASSIGN TYPE	00~~0C : **1-2		00,05
	bit6	SW2 TOGGLE/MOMENTARY	0:Toggle, 1:Momentary		00,09
	bit7	SW 2 ON/OFF	0:OFF, 1:ON		00,07
768	b0~~6	KNOB 1 ASSIGN TYPE	00~~7C : **1-3		00,0A
	bit7	REALTIME CONTROLS	0:A, 1:B		00,0E
769		KNOB 2 ASSIGN TYPE	00~~7C : **1-3		00,0B

770		Knob 3 Assign Type	00~~7C : **1-3		00,0C
771		Knob 4 Assign Type	00~~7C : **1-3		00,0D
TIMBRE 1 PARAMETER					
772		PROGRAM NO.	00~~7F : 00~~127		n,00
773		PROGRAM BANK	00~~10 : Bank A~~g(d)		n,00
774	b0~~b4	MIDI CHANNEL	00~~0F : MIDI Channel 1~~16, 10:Global Channel		n,04
	b5~~b7	STATUS	0:INT, 1:Off, 2:EXT, 3:EX2		n,03
775		BANK SELECT MSB	00~~7F : 00~~127	Available only when status is EXT2.	n,05
776		BANK SELECT LSB	00~~7F : 00~~127		n,06
777		VOLUME	00~~7F : 00~~127		n,02
778		PITCH BEND RANGE	E7:PROG, E8~~18 : -24~~24		n,0C
779		TRANSPOSE	E8~~18 : -24~~24		n,0A
780		DETUNE MSB	FB50~~4B0: -1200~~1200		n,0B
781		DETUNE LSB			
782		DELAY START	00~~60,61 : **1-5		n,0D
783		PAN	00:RND, 01~~7F : L001~~R127		n,01
784		SEND 1 LEVEL	00~~7F : 00~~127		n,29
785		SEND 2 LEVEL	00~~7F : 00~~127		n,2A
786	b1~~ 3	DRUMKIT IFX4 Patch	0:IFX1, 1:IFX2, 2:IFX3, 3:IFX4, 4:IFX5, 5:L/R		n,2E
	b4~~ 6	DRUMKIT IFX5 Patch			n,2F
bit0	DRUMKIT IFX3 Patch			n,2B	
b6~~ 7				n,2D	
787	b0~~ 2	DRUMKIT IFX1 Patch			n,2B
	b3~~ 5	DRUMKIT IFX2 Patch			n,2C
788		BUS SELECT	0:DKit,1:L/R,2~~6:IFX1~~5,7~~8:1~~2,B:1/2,D:Off		n,28
789	bit0	PROGRAM CHANGE FILT	0:DIS, 1:ENA		n,0F
	bit1	AFTER TOUCH FILTER	0:DIS, 1:ENA		n,10
	bit2	DAMPER FILTER	0:DIS, 1:ENA		n,11
	bit3	PORTAMENTO FILTER	0:DIS, 1:ENA		n,12
	bit4	JS(X) AS AMS FILTER	0:DIS, 1:ENA		n,13
	bit5	JS(Y+) FILTER	0:DIS, 1:ENA		n,14
	bit6	JS(Y-) FILTER	0:DIS, 1:ENA		n,15
	bit7	RIBBON FILTER	0:DIS, 1:ENA		n,16
790	bit0	ASSIGN KNOB 1 FILTER	0:DIS, 1:ENA		n,17
	bit1	ASSIGN KNOB 2 FILTER	0:DIS, 1:ENA		n,18
	bit2	ASSIGN KNOB 3 FILTER	0:DIS, 1:ENA		n,19
	bit3	ASSIGN KNOB 4 FILTER	0:DIS, 1:ENA		n,1A
	bit4	ASSIGN SW 1 FILTER	0:DIS, 1:ENA		n,1B
	bit5	ASSIGN SW 2 FILTER	0:DIS, 1:ENA		n,1C
	bit6	FOOT PEDAL/SW FILTER	0:DIS, 1:ENA		n,1D
	bit7	OTHER CONTROL FILTER	0:DIS, 1:ENA		n,1E
791	b0,1	FORCE OSC MODE	0:Program, 1:Poly, 2:Mono, 3:Mono Legate		n,07
	b2,3	OSC SELECT	0:BOTH, 1:OSC1, 2:OSC2		n,08
	b4,5	KARMA OSC ON/OFF	0:NORMAL, 1:BY OFF, 2:BY ON		n,27
	bit6	USE PROGRAM'S SCALE	0:DIS, 1:ENA		n,0E

792	PORTAMENT TIME	FF:PRG, 00:Off, 01~~7F : 1~~127	n,09
793	KEY Z TOP	00~~7F : C-1~~G9	n,1F
794	KEY Z BOTTOM	00~~7F : C-1~~G9	n,22
795	b0~~3 KEY Z TOP SLOPE	0~~F: **3-1	n,20
	b4~~7 KEY Z BOTTOM SLOPE	0~~F: **3-1	n,21
796	VEL Z TOP	01~~7F : 1~~127	n,23
797	VEL Z BOTTOM	01~~7F : 1~~127	n,26
798	b0~~3 VEL Z TOP SLOPE	0~~F : 0~~120 (Vel fade slope = Para value * 8)	n,24
	b4~~7 VEL Z BOTTOM SLOPE		n,25
799	MOSS VOICE	00~~06: 0~~6	n,30
TIMBRE 2~~8 PARAMETERS			
800	Same as TIMBRE 1 (224~~251) (28 * 7 = 196 Bytes)		n,00
995			n,30

**3-1 : 0 : 0 1 : 1 (Semi tone) 2 : 2 3 : 3
 4 : 4 5 : 6 (0.5 Oct) 6 : 8 7 : 10
 8 : 12 (1 Oct) 9 : 18 (1.5 Oct) A : 24 (2 Oct) B : 30 (2.5 Oct)
 C : 36 (3 Oct) D : 48 (4 Oct) E : 60 (5 Oct) F : 72 (6 Oct)

[TABLE 4] GLOBAL PARAMETERS
No. : No. in the GLOBAL DUMP DATA.

No. (bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION
GLOBAL PARAMETER			
00	MASTER TUNE	CE~~32 : -50~~50[Cent]	
01	KEY TRANSPOSE	F4~~0C : -12~~12	
02	VELOCITY CURVE	0~~7 : 1~~8	
03	AFTER TOUCH CURVE	0~~7 : 1~~8	
04	bit0 FOOT SW POLARITY	0:-, 1:+	
	bit1 DAMPER POLARITY	0:-, 1:+	
	bit2 CONVERT POSITION	0:PreMIDI, 1:PostMIDI	
	bit3 PROG AUTO KARMA	0:OFF, 1:ON	
	bit4 COMBI AUTO KARMA	0:OFF, 1:ON	
05	FOOT SW ASSIGN	00~~0B : **4-1	
06	FOOT PEDAL ASSIGN	00~~0B : **4-2	
07	(RESERVED)		
08 : 199	USER SCALE (Octave) (12*16 Bytes)	9D~~63 : -99~~99 [Cent]	
200 : 327	USER SCALE (All Notes) (128 Bytes)	9D~~63 : -99~~99 [Cent]	
328 : 583	PROG CATEGORY NAME (16*16 Bytes)	20~~7F [ASCII CODE]	
584 : 839	COMBI CATEGORY NAME (16*16 Bytes)	20~~7F [ASCII CODE]	
840	KARMA KNOB 1 ASSIGN	FF:OFF, 00~~5F : 00~~95	
841 : 856	KARMA KNOB 2~~8, SW 1, 2, ON/OFF, SCENE, LATCH, CHORD TRIGGER 1~~4 ASSIGN Same as KARMA KNOB 1 ASSIGN (840) (16 Bytes)		
857	(RESERVED)		

**4-1 : 0: OFF 1: FOOT SW:CC#82 2: PORTAMENTO SW:CC#65 3: SOSTENUTO:CC#66
 4: SOFT:CC#67 5: KARMA SW 6: LATCH SW 7: PROGRAM UP

8: PROGRAM DOWN

9: SONG START/STOP

A: SONG PUNCH IN/OUT

B: CUE REPEAT CONTROL

**4-2 : 0: OFF

1: MASTER VOLUME

2: FOOT PEDAL:CC#04

3: PORTAMENTO TIME:CC#05

4: VOLUME:CC#07

5: POST IFX PAN:CC#08

6: PAN:CC#10

7: EXPRESSION:CC#11

8: FX CONTROL 1:CC#12

9: FX CONTROL 2:CC#13

A: MFX SEND 1:CC#93

B: MFX SEND 2:CC#91

P [TABLE 5]

Parameter No. at COMBINATION PLAY mode

n(=0~~7) : Timbre 1~~8

PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
TIMBRE PARAMETER			
BANK/PROGRAM	00~~87F : A000~~g(d)128		n,00
PAN	00:RND, 01~~7F : L001~~R127		n,01
VOLUME	00~~7F : 0~~127		n,02
KARMA COMMON PARAMETER			
TEMPO	28~~F0 : 40~~240		08,00
SW1 (for Scenel)	0:OFF, 1:ON		08,01
SW2 (for Scenel)	0:OFF, 1:ON		08,02
SW1 (for Scene2)	0:OFF, 1:ON		08,03
SW2 (for Scene2)	0:OFF, 1:ON		08,04
SCENE	0:1, 1:2		08,05
LATCH	0:OFF, 1:ON		08,06
ON/OFF	0:OFF, 1:ON		08,07
KNOB 1 (for Scenel)	00~~7F : 0~~127		08,12
KNOB 2~~8 (for Scenel) Same as KNOB 1 (for Scenel)			08,13 : 08,19
KNOB 1 (for Scene2)	00~~7F : 0~~127		08,1A
KNOB 2~~8 (for Scene2) Same as KNOB 1 (for Scene2)			08,1B : 08,21
KARMA MODULE PARAMETERS A			
GE SELECT	0~~??? : 0~~???		09,00
SOLO	0:OFF, 1:ON		09,01
RUN	0:OFF, 1:ON		09,02
KARMA MODULE PARAMETERS B~~D Same as KARMA MODULE PARAMETERS A			0A,00 : 0C,02
SWITCH PARAMETER			
SW 1 ON/OFF	0:OFF, 1:ON		0D,00
SW 2 ON/OFF	0:OFF, 1:ON		0D,01
REALTIME CONTROLS	0:A, 1:B		0D,02

[TABLE 6]

Parameter No. at PROGRAM PLAY mode

PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
PERFORMANCE EDITOR			
OCTAVE	FD~~03 : -3~~3		00,00
PITCH STRETCH	F4~~0C : -12~~12	Only for PCM program	00,01
OSC BALANCE	F6~~0A : -10~~10		00,02
AMP LEVEL	F6~~0A : -10~~10		00,03
ATTACK TIME	F6~~0A : -10~~10		00,04
DECAY TIME	F6~~0A : -10~~10		00,05
IFX BALANCE	F6~~0A : -10~~10		00,06

MFx BALANCE	F6~~0A : -10~~10	00,07
KARMA COMMON PARAMETER Under Parameter's right side of '/' is Parameter ID of EXB-MOSS.		
TEMPO	28~~F0 : 40~~240	01/03,00
SW1 (for Scenel)	0:OFF, 1:ON	01/03,01
SW2 (for Scenel)	0:OFF, 1:ON	01/03,02
SW1 (for Scene2)	0:OFF, 1:ON	01/03,03
SW2 (for Scene2)	0:OFF, 1:ON	01/03,04
SCENE	0:1, 1:2	01/03,05
LATCH	0:OFF, 1:ON	01/03,06
ON/OFF	0:OFF, 1:ON	01/03,07
KNOB 1 (for Scenel)	00~~7F : 0~~127	01/03,12
KNOB 2~~8 (for Scenel) Same as KNOB 1 (for Scenel)		01/03,13 : 01/03,19
KNOB 1 (for Scene2)	00~~7F : 0~~127	01/03,1A
KNOB 2~~8 (for Scene2) Same as KNOB 1 (for Scene2)		01/03,1B : 01/03,21
GE SELECT	0~~???: 0~~???	02/04,00
SWITCH PARAMETER Under Parameter's right side of '/' is Parameter ID of EXB-MOSS.		
SW 1 ON/OFF	0:OFF, 1:ON	05/06,00
SW 2 ON/OFF	0:OFF, 1:ON	05/06,01
REALTIME CONTROLS	0:A, 1:B	05/06,02

[TABLE 7] 1 DRUMKIT PARAMETERS
No. : No. in the DRUMKIT DUMP DATA.

No. (bit)	PARAMETER	DATA(Hex) : VALUE	DESCRIPTION	PARA No.
00 : 15	DRUMKIT NAME (Head) : DRUMKIT NAME (Tail)	20~~7F		----
KEY=C-1 PARAMETERS				
16	HIGHER BANK	0:ROM, 1:RAM, ~~~???	??? is depend on PCM option.	00/0B
17 bit0	HIGHER START OFFSET	0:OFF, 1:ON		02/0D
17 bit1	HIGHER REVERSE	0:OFF, 1:ON		03/0E
18	HIGH SAMPLE NO(MSB)	00~~19C : 00~~412	Higher Vel's Drumsample	01/0C
19	HIGH SAMPLE NO(LSB)			
20	HIGHER LEVEL	9D~~63 : -99~~99		04/0F
21	HIGHER TRANSPOSE	C0~~3F : -64~~63		05/10
22	HIGHER TUNE	9D~~63 : -99~~99		06/11
23	HIGHER ATTACK LEVEL	C0~~3F : -64~~63		07/12
24	HIGHER DECAY LEVEL	C0~~3F : -64~~63		08/13
25	HIGHER CUTOFF LEVEL	C0~~3F : -64~~63		09/14
26	HIGH RESONANCE LEVEL	C0~~3F : -64~~63		0A/15
27	(RESERVED)			----
28 : 39	LOWER Same as HIGHER (16~~27) (12 Bytes)	(Above Parameter's right side of '/' is PARA No. of LOWER.)		
40	PAN	00:RND, 01~~7F : L001~~R127		16
41	BUS SELECT	00:L/R, 01~~05:IFX1~~5, 06~~07:1~~2, 0A:1/2, 0C:Off		17
42	SEND 1 LEVEL	00~~7F: 00~~127		18
43	SEND 2 LEVEL	00~~7F: 00~~127		19

44	EXCLUSIVE GROUP	00:Off, 01~~7F : 001~~127	1A
bit0	VOICE ASSIGN	0:OFF, 1:ON	1B
bit1	SINGLE TRIGGER	0:OFF, 1:ON	1C
45	bit2	RECEIVE NOTE ON	0:DIS, 1:ENA
bit3	RECEIVE NOTE OFF	0:DIS, 1:ENA	1E
46	VEL SAMPLE SW	01~~7F : 01~~127	For DRUMSAMPLE SELECT by Vel
47	(RESERVED)		----
KEY=C#-1~~G9 PARAMETERS			
48	: Same as KEY=C-1 (16~~47) (127 * 32 = 4064 Bytes)		00
:			:
4111			1F

[TABLE 8] SEQUENCE DATA PARAMETERS

00	EVENT DATA START ADDRESS(MSB)	
:	: (4 Bytes)	
03	EVENT DATA START ADDRESS(LSB)	
04	EVENT DATA FREE AREA START ADDRESS(MSB)	
:	: (4 Bytes)	
07	EVENT DATA FREE AREA START ADDRESS(LSB)	
08	SONG 00 EVENT DATA ADDRESS(MSB)	
:	: (4 Bytes)	
11	SONG 00 EVENT DATA ADDRESS(LSB)	
12	SONG 001~~199, EVENT DATA ADDRESS	
:	Same as SONG 00 EVENT (08~~11)	
807	(4 * 199 = 796 Bytes)	
808	CURRENT SONG NO.	00~~C7 : 00~~199
809	CURRENT PAT NO.	00~~95 : 00~~149
810	CURRENT FX SONG NO.	00~~C7 : 00~~199
811	VALID SONG	00~~C8 : 00~~200
812	VALID SONG NO.	00~~C7 : 00~~199
:		
1011	(200 Bytes)	

[TABLE 9] 1 CUE LIST DATA 2000.12.22

CUE LIST		
00	CUE LIST NAME (Head)	20~~7F
:	: (4 Bytes)	
15	CUE LIST NAME (Tail)	
16	TEMPO	28~~F0 : 40~~240
17	TEMPO MODE	0:AUTO, 1:MANUAL
18	(RESERVED)	
19	(RESERVED)	
STEP 01		
20	SONG NO.	0~~C7 : S000~~S199 FE : Continue to step01 FF : End
21	b0~~6 REPEAT	00~~3F:1~~64, 7F:FS
bit7	Load FX	0:OFF, 1:ON
STEP 02~~100		
22	: Same as STEP 01 (20~~21) (2 * 99 = 198 Bytes)	
:		
219		

[TABLE 10] 1 SONG SEQUENCE DATA

SONG		
00	SONG NAME (Head)	

15	: SONG NAME (Tail)	20~~7F
INSERT EFFECT PARAMETERS		
16 : 135	FX1~~5 (24Bytes * 5) (120 Bytes)	
MASTER EFFECT PARAMETERS		
136 : : 191	FX1~~2 (20Bytes * 2) Return, Chain & EQ (16 Bytes) (56 Bytes)	
KARMA PARAMETERS		
192 : 761	Same as COMBI.KARMA (192~~761) (570 Bytes)	
COMMON PARAMETERS		
762 : 771	Same as COMBI.COMMON PARAMETER (762~~771) (10 Bytes)	
TRACK 1~~16 PARAMETERS		
772 : 1219	Same as TIMBRE 1 (772~~799) (28 * 16 = 448 Bytes)	
SONG CONTROL DATA		
1220	RPPR ON/OFF	0:OFF, 1:ON
1221	TRACK SELECT	0~~F, 10:TRK01~~15, MASTER
1222	(RESERVED)	
1223	(RESERVED)	
1224	METER	10~~3F : **12-1
1225	TEMPO	28~~F0 : 40~~240
1226	METRONOME LEVEL	00~~7F : 00~~127
1227	METRONOME BUS SELECT	0:L/R, 1:L, 2:R, 3~~4:1~~2, 7:1/2
1228	METRONOME PRECOUNT	00~~02 : 0~~2
1229	TEMPO MODE	0:AUTO, 1:MANUAL, 2:REC
1230	TRACK9~~16 MODE	0:PLAY, 1:MUTE
1231	TRACK1~~8 MODE	0:PLAY, 1:MUTE
1232 : 1247	TRACK 1 NAME (Head) : TRACK 1 NAME (Tail)	20~~7F
1248 : 1487	TRACK 2~~16 NAME Same as TRACK 1 NAME (1232~~1247) (16 * 15 = 240 Bytes)	
1488 : 1491	TR1 EVENT ADRS (MSB) : (4 Bytes) TR1 EVENT ADRS (LSB)	
1492 : 1555	TRACK 2~~16, MASTER TRACK EVENT ADDRESS Same as TRACK 1 EVENT (1488~~1491) (4 * 16 = 64 Bytes)	
1556 : 1559	(RESERVED) : (4 Bytes) :	
PATTERN 0		
1560 : : 1575	NAME (Head) : : NAME (Tail)	20~~7F [ASCII CODE]
1576	LENGTH	01~~63 : 00~~99
1577	METER	**12-1

1578	(RESERVED)	
1579	(RESERVED)	
1580 : 1583	EVENT DATA ADRS(MSB) : (4 Bytes) EVENT DATA ADRS(LSB)	
1584 : 3959	PATTERN 1~~99 Same as PATTERN 0 (1560~~1583) (24 * 99 = 2376 Bytes)	
3960	TRACK1~~8 INT	0:OFF, 1:ON
3961	TRACK9~~16 INT	0:OFF, 1:ON
3962	TRACK1~~8 EXT	0:OFF, 1:ON
3963	TRACK9~~16 EXT	0:OFF, 1:ON
TRACK 1 PLAY LOOP		
bit7	ASSIGN	0:OFF, 1:ON
3964 b0~~6	START MEASURE (MSB)	01~~3E7 : 001~~999
3965	START MEASURE (LSB)	
3966 b0~~6	END MEASURE (MSB)	01~~3E7 : 001~~999
3967	END MEASURE (LSB)	
3968 : 4027	TRACK 2~~16 Same as TRACK 1 PLAY LOOP (3416~~3419) (4 * 15 = 60 Bytes)	
KEY=C-1 RPPR		
4028	PATTERN	00~~63 : U00~~U99 00~~95 : P00~~P149
b0~~3	TRACK	00~~0F : 01~~16
4029 b4~~7	SYNC	0:Off, 1:Beat, 2:Measure, 3:SEQ
b0~~3	MODE	0:Once, 1:Manual, 2:Endless
4030 b4~~7	STATUS	0:NOTE, 1:PAT, 2:SHUTDOWN
4031	SHIFT NOTE	F4~~0C : -12~~12
4032 : 4539	KEY=C#-1~~G9 RPPR Same as KEY=C-1 RPPR (4028~~4031) (4 * 127 = 508 Bytes)	

**10-1 : 10~~1F : 1/4~~ 16/4
20~~2F : 1/8~~ 16/8
30~~3F : 1/16~~16/16

-Revision History-

1.0 Jan.30.'01 Initial Release.